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SPECIAL LISTING

CURRENT CANCER RESEARCH

on

ANIMAL, TISSUE, CHEMICAL, AND VIRAL SUPPLY SOURCES FOR CANCER RESEARCH

SEPTEMBER 1981

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service • National Institutes of Health •
National Cancer Institute

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A SERVICE OF THE
INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB)

HE 20.3173:

Dear Cancer Researcher:

This **SPECIAL LISTING** of Current Cancer Research Projects is a publication of the INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) Program of the National Cancer Institute. Each **LISTING** contains descriptions of ongoing projects in one selected cancer research area. Approximately 55 areas are covered in separate **SPECIAL LISTINGS.** Each title of these **SPECIAL LISTINGS** is published annually.

The purpose of these **LISTINGS** is to promote and facilitate the exchange of information among cancer scientists. The project descriptions in the **LISTINGS** are provided by cancer scientists from more than 80 different countries.

Descriptions of more than 20,000 other current cancer-related projects are on the CANCERPROJ data base. This cancer data base is available as part of the MEDLINE System of the National Library of Medicine and can be searched by librarians at some 1400 locations in the U.S. and in 12 other countries. CANCERPROJ is also available via the new EURONET data base system in EUROPE.

Researchers who have summaries (project descriptions) in a given **LISTING** automatically receive complimentary copies of that **LISTING.** Additional copies of this **LISTING** or other **LISTINGS** can be purchased from the National Technical Information Service (see order form in back of this **LISTING).**

These **LISTINGS** are prepared for the ICRDB Program by the Current Cancer Research Project Analysis Center (CCRESPAC) which is operated by the Smithsonian Science Information Exchange (SSIE).

Investigators are urged to prepare accurate summaries of their research projects for inclusion in the CANCERPROJ data base as well as future **SPECIAL LISTINGS.** The Project Registration Form found in the back of this **LISTING** should be used to register a new research project, update an out of date summary, and to notify the Program of changes in your address. Please send your correspondence to:

CCRESPAC Project Officer
ICRDB Program Office
National Cancer Institute
Westwood Building
Room 10A18
5333 Westbard Avenue
Bethesda, MD 20205

RESEARCH AREAS

	Abstract Number
I. SOURCES FOR TISSUE AND SERUM SAMPLES, AND CENTERS FOR CELL AND ORGAN CULTURES	1
A. PROCUREMENT CENTERS FOR HUMAN TISSUE SPECIMENS	1
B. CELL AND TISSUE CULTURE REPOSITORIES AND RELATED CYTOLOGIC FACILITIES	9
C. PROCUREMENT CENTERS FOR BODY FLUIDS FROM CANCER PATIENTS AND OTHER INDIVIDUALS	32
II. SOURCE FACILITIES FOR ANIMALS	40
A. SOURCE FACILITIES FOR RODENTS	40
B. SOURCE FACILITIES FOR NON-HUMAN PRIMATES AND OTHER EXPERIMENTAL ANIMALS	71
III. OTHER RESEARCH RESOURCES AND SERVICES	91
A. FACILITIES FOR PRODUCTION AND TYPING OF ONCOGENIC VIRUSES	91
B. PREPARATION AND ANALYSIS OF CHEMICALS AS POTENTIAL THERAPEUTIC AGENTS OR REFERENCE CARCINOGENS	94
C. REFERENCE RESOURCES	107
1. STATISTICAL RESOURCES	107
2. INFORMATION SYSTEMS AND INFORMATION DISSEMINATION	115
3. LIBRARIES AND PUBLICATIONS	153
4. DATA BASES AND PROCESSING	167

Investigator Index

NOTE: If you are a Principal Investigator with a research project registered with the ICRDB, you are entitled to two complimentary subscriptions of CANCERGRAMS. If you are NOT receiving CANCERGRAMS, be sure to mention this in your next correspondence with the Program.

CURRENT CANCER RESEARCH

I. SOURCES FOR TISSUE AND SERUM SAMPLES, AND CENTERS FOR CELL AND ORGAN CULTURES

A. PROCUREMENT CENTERS FOR HUMAN TISSUE SPECIMENS

1. MODEL SYSTEM DEVELOPMENT AND ANTICANCER AGENT COLLECTION

Harrap, K. R., University of London, *Senate House, London WC1E 7HU, England, United Kingdom*

OBJECTIVES: Develop a model tumor system, including human cancers of breast, lung, colon, and ovary, grown in CBA mice deprived of T-lymphocytes and protected with syngeneic bone marrow; examine various methods of transplantation; investigate methods of assessing antitumor effectiveness; and develop methods comparing response of such tumor with response in patients receiving chemotherapy. Collect potential antineoplastic agents obtained from various sources in England. Submit these compounds to Chester Beatty Research Institute and NCI for evaluation by series of standard screening tests. Follow up active substances by means of procedures additional to standard NCI screening tests referred to above.

2. PEDIATRIC TUMOR RESOURCE

Kaizer, H., Johns Hopkins University, School of Medicine, Dept. of Oncology, *725 N. Wolfe St., Baltimore, Maryland*, 21205, United States of America

OBJECTIVES: Provide samples of freshly isolated sterile tumor specimens from both solid tumor and acute leukemia patients in a form suitable for tissue culture. Preserve residual biopsied tissue for distribution for biochemical studies. Preserve tumor tissue obtained at necropsy under non-sterile conditions for distribution for biochemical studies. Provide samples of secondary cultures from successfully cultured tumor specimens. Preserve and distribute to the SVCP Serum Bank serum obtained as diagnostic or evaluative blood tests are performed.

3. PROSTATE CANCER TISSUE COLLECTION CENTER

Malinin, T. I., Claflin, A. J., University of Miami, School of Medicine, Dept. of Surgery, *1400 N.W. 10th Ave., Box 520875, Coral Gables, Florida*, 33152, United States of America

The Prostate Cancer Tissue Collection Center is engaged in collection, characterization, study and distribution of the tissues and cell cultures from normal prostate glands and prostate glands with benign and malignant tumors. These glands are excised under sterile conditions when viable tissue is needed for study, or without aseptic precautions when preservation of viable tissue is not necessary. The prostate glands with adenomas and carcinomas are collected from surgical specimens and from autopsies. Viable tissues are distributed to investigators at refrigerator temperatures in synthetic tissue culture media, or control-rate frozen in the presence of DMSO. The latter are stored in liquid nitrogen. Non-viable specimens are stored at minus 70 degrees C. Cell cultures are initiated from each viable specimen and primary and secondary cultures are placed into frozen repository.

To date, studies with cell cultures demonstrated that explants of normal and tumor-containing prostate glands produce initial outgrowth of epithelial cells. The growth of adult cells did not appear to depend on the age of the donor.

BIBLIOGRAPHIC REFERENCES: Malinin, T.I., Claflin, A.J., Block, N.L. and Brown, A.L.: Establishment of Primary Cell Cultures from Normal and Neoplastic Human Prostate Gland Tissue. Models for Prostate Cancer (G.P. Murphy, ed). Progr. in Clinical and Biological Research. Alan R. Liss, New York, 37:161-180, 1980.

4. HUMAN TISSUE COLLECTION RESOURCE

Yeager, H., Georgetown University, School of Medicine, Dept. of Medicine/Pharmacology, *3800 Reservoir Rd. N.W., Washington, District of Columbia*, 20007, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

5. STORAGE AND AUTOLOGOUS TRANSPLANTATION OF HUMAN BONE MARROW

Graze, P., University of California, Los Angeles Campus, School of Medicine, Dept. of Medicine, *2025 Zonal Ave., Los Angeles, California*, 90024, United States of America

This is part of a broader project. A summary of this subproject is not available.

6. MARROW CRYOPRESERVATION (HUMAN)

Wells, J., University of California, Los Angeles Campus, School of Medicine, Dept. of Medicine, *2025 Zonal Ave., Los Angeles, California*, 90024, United States of America

This is part of a broader project. A summary of this subproject is not available.

7. CORE - HUMAN TUMOR PROCUREMENT

Hirshaut, Y., Sloan Kettering Inst. for Cancer Research, *410 E. 68th St., New York, New York*, 10021, United States of America

This is part of a broader project. A summary of this subproject is not available.

8. CORE FACILITY - TISSUE PROCUREMENT (HUMAN)

Pretlow, T. G., University of Alabama in Birmingham, School of Medicine, Dept. of Pathology, *1919 7th Ave. S., Birmingham, Alabama*, 35233, United States of America

This is part of a broader project. A summary of this subproject is not available.

B. CELL AND TISSUE CULTURE REPOSITORIES AND RELATED CYTOLOGIC FACILITIES

9. FROZEN TISSUE BANK

Griffin, D., Pegram, S., Bartlett, M., Jacobs, H. S., Imperial Cancer Research Fund, Medical Oncology Unit, *Lincoln's Inn Fields, London WC2A 3PX, England, United Kingdom*

The preparation and freezing of cell samples is a major part of the work of this laboratory. A standard technique for the preservation of lymphocytes from patients with leukemia was employed, which involved freezing the cells in a ten per cent, DMSO, ten per cent, autologous plasma cryopreservation solution in a Cryoson BV4 programmable freezer, programmed with a two-step cooling regime. Cell concentration and viability were routinely recorded before freezing, and using a standardized method of thawing, viabilities of 75 per cent, or more have been consistently obtained.

Lymph node cell suspensions from patients with non-Hodgkin's lymphoma were also stored, and it has been found that a 14 per cent, PVP solution gives improved viabiliy (over DMSO) for these cells.

We have a large register of stored cells from cases of ALL, AML, AMML and CLL together with material from B-ALL, acute monocytic leukemia, promyelocytic leukemia, erythroleukemia and various non-Hodgkin's lymphomas. We have attempted to cryopreserve granulocytes from patients with CGL. DMSO as a cryopreservative resulted in very low viable

cell recovery. We have had greater success with PVP as an external cryoprotectant using adhesion and ethidium bromide/fluorescein diacetate as measures of viability. Freeze substitution and EM studies are now planned to give an insight into the amount of ice in cells when frozen at different rates using a Planner Programmable Freezer.

10. FROZEN TUMOR BANK

Bogden, A. E., Mason Research Inst. Inc., *21 Harvard St., Worcester, Massachusetts,* 01608, United States of America

OBJECTIVE: Maintain experimental human and animal tumors in a frozen state for the Division of Cancer Treatment Cancer Research Program and for use by the international research community. This bank is considered to be a unique resource as many of the tumors are not otherwise available. Tumors from this bank will be shipped to investigators whom the Government finds to be qualified, who demonstrate a need for a particular tumor, and who are able to propagate that tumor in their laboratories for experimental purposes. At present, the tumor bank contains approximately 343 mouse, 53 rat, and 23 other tumor lines.

11. SUPPLY OF IMMUNE-RELATED CELL LINES

Cohn, M., Salk Inst. for Biological Studies, *10010 N. Torry Pines Blvd., P.O. Box 1809, La Jolla, California,* 92037, United States of America

The contractor will set up a cataloging and storing system for tumor lines. The contractor will then send either frozen cell lines or mice bearing tumors to individuals requesting these items. Approximately 100 requests for frozen cell lines and 100 requests for mice bearing tumors will be received and processed.

12. CRYOPRESERVATION OF HUMAN LYMPHOID AND TUMOR CELLS

Weiner, R. S., Sidney Farber Cancer Center Inc., *44 Binney St., Boston, Massachusetts,* 02115, United States of America

This is part of a broader project. A summary of this subproject is not available.

13. OPERATION OF A REFRIGERATED REPOSITORY FOR BIOLOGICAL MATERIALS

Trapani, R., Microbiological Associates, *5221 River Rd., Bethesda, Maryland,* 20016, United States of America

OBJECTIVE: Provide for a repository and distribution center for various types of biological materials including viruses, viral proteins, tissue culture fluids, tissue culture cell lines, antisera to viruses and viral proteins, and human specimen material. The Contractor will: provide suitable air-conditioned floor space for installation of mechanical and liquid nitrogen freezers; ship and receive a variety of reagents; maintain and operate facilities for storage of package and bulk reagents; maintain security of all storage facilities; and maintain an inventory control system for materials received and distributed.

14. SKIN FIBROBLAST REPOSITORY FOR HIGH RISK CANCER

Lubiniecki, A. S., Meloy Lab. Inc., *6715 Electronic Dr., Springfield, Virginia,* 22151, United States of America

This is proposed as a service contract for maintaining and operating the repository. A large bank of over 1800 fibroblast cultures of cells from family members and other persons at high risk of developing cancer, obtained and stored for future studies, has been established under a separate contract to screen SV40 susceptibility. These fibroblasts have prove valuable as a resource in collaborative research with other investigators especially since they represent a pertinent repository of genetic material from persons who may no longer be living. This will become the largest repository in the world for fibroblast cultures related to cancer.

15. DEVELOPMENT OF A CELL BANK FOR BOWEL CANCER RESEARCH

Hay, R. J., American Type Culture Collection, Dept. of Cell Culture, *12301 Parklawn Dr., Rockville, Maryland,* 20852, United States of America

The objectives of this program are to develop and otherwise obtain, characterize, expand, bank and distribute cell lines of use for studies on cancer of the large bowel. Work with tissues of human and laboratory animal origins is involved.

A committee was organized, and met in July to discuss the program. This group now consists of four members; the principal investigator (Robert J. Hay), D. Chopra, Ph.D.; John S. MacDonald, M.D., and Marvin M. Romsdahl, M.D., Ph.D. The Committee will examine credentials of lines banked before their release to the general scientific community.

Twenty four cell lines from human colorectal tumors and one cell line (CMT93) from a chemically induced tumor of the mouse have been received. The human lines include LoVo; SW48, 403, 480, 620, 797, 802, 837, 948, 1116, 1222, 1417, 1463; COLO 201, 205, 320DM, 320 HSR, 321 HSR; WidR; HuCCL-14; ME(ACR(plus)-S), PF(ACR(plus)-As); DLD1 and HCt 15. Lines shown to be free of adventitious agents have been or are being expanded from token freezes to produce larger seed and distribution stocks of ampules. Progeny from these stocks have or are being characterized further with regard to karyology, isoenzymology, tumorigenicity, growth properties, antigenic markers, and ultrastructure as appropriate. Five such seed-distribution stocks are currently in the final stages of characterization.

Isolation and cell line development work has been conducted on normal tissues from 39 humans and one Rhesus monkey, and on 18 human colon, rectal or cecal tumors. Eighteen of the tissues studied yielded cell lines which could be propagated sufficiently to warrant token freezing in liquid nitrogen for further separation and characterization efforts.

16. REPORT FROM THE PATHOLOGICAL TECHNOLOGY SECTION

Coolidge, B. J., U.S. Dept. of Health & Human Services, Public Health Service, National Inst. of Health, National Cancer Inst., Pathological Technology Section, *9000 Rockville Pike, Bethesda, Maryland,* 20205, United States of America

Stained tissue sections are the fundamental basis of all clinical and experimental studies of cancer. The Section prepares histological sections for the investigators of the National Cancer Institute. It makes available all the established routine and special stains and, in addition, develops and provides the current experimental methods of tissue preparation such as enzyme stains and specific histological stains.

17. ACQUISITION OF HUMAN TUMOR SPECIMENS FOR VIRUS STUDIES

Hirshaut, Y., Memorial Hospital for Cancer & Allied Diseases, *1275 York Ave., New York, New York,* 10021, United States of America

The Contractor shall collect human tumor specimens to be used in a systematic search for tumor-specific antigens and human oncogenic viruses. The rationale for selecting specific types of tumors for study shall be based on accumulated evidence suggesting that they may be of viral origin. Serial specimens will be taken from both patients and their immediate relatives at various stages of the disease. The types of specimens to be collected include tumor tissue (surgical and postmortem), tumor imprints, lymphocytes, skin biopsies, and sera. Systematic specimen records will be maintained and will consistently include all clinical information which may be of assistance to the investigative virologist or immunologist in the interpretation of his data. To assure adequate controls, tissues and sera will also be collected from comparable (in terms of age and sex) normal individuals and patients with benign disease.

18. REGISTRY OF EXPERIMENTAL CANCERS

Stewart, H. L., Dunn, T. B., Deringer, M. K., Sass, B., Hoch Ligeti, C., Hollander, C. F., Levitt, M. H., U.S. Dept. of Health & Human Services, Public Health Service, National Inst. of Health, National Cancer Inst., Cancer Cause & Prevention Division, *9000 Rockville Pike, Bethesda, Maryland,* 20205, United States of America

The objectives of the Registry of Experimental Cancers are 1) the storage and retrieval of pathologic material and data on cancers and other lesions of laboratory animals (primary rodents) and 2) the use of such information for research and educational purposes.

The Registry has acquired a total of 1883 (76 since the 1979 report) single or group accessions from investigators outside the NCI. Approximately 53,200 (3,200 since the 1979 report) records have been prepared for coding and coded.

Thirty-two investigators have come to the Registry for study and consultation on single or multiple visits. Two foreign investigators were at the Registry for 2 days and 3 weeks respectively.

BIBLIOGRAPHIC REFERENCES: Stewart, H.L.: Tumors of the soft tissues. In Turusov, V.S. (Ed.): Pathology of Tumors in Laboratory Animals. Vol. II Tumours of the Mouse. Lyon, IARC, 1979, pp. 487-526. Stewart, H.L., Dunn, T.B., Snell, K.C., and Deringer, M.K.: Tumours of the respiratory tract. In Turusov, V.S. (Ed.): Pathology of Tumours in Laboratory Animals. Vol. II Tumours of the Mouse. Lyon, IARC, 1979, pp. 251-288.

19. PRIMARY CANCER THERAPY GROUP (NSABP)

Elias, E. G., Didolkar, M. S., Morris, D. M., Kim, I., Bonczkowski, S., Shamsuddin, A. M., Klein, M., Soccio, J., Zental, T., University of Maryland, Baltimore Professional Schools, School of Medicine, Dept. of Surgery, *655 W. Baltimore St., Baltimore, Maryland,* 21201, United States of America

As a participating member of the Primary Breast Cancer Therapy Group (NSABP), the University of Maryland and affiliated hospitals contribute to ongoing and future proposed protocols, and conduct the care and follow-up of patients entered in such protocols, and obtain necessary tissues for biological markers. The current proposal seeks funding to supplement funded participation in the NSABP to: (a) continue patient accrual at a more intense rate; (b) maintain follow-up on those patients already entered into NSABP protocols; and (c) collect appropriate and necessary biological material. The University of Maryland currently participates in the following protocols: (1) B-06, which is a trial to compare the worth of segmental mastectomy with and without breast radiation with total mastectomy plus axillary dissection. All patients shall undergo axillary dissection and those with histologically positive lymph nodes will receive adjuvant chemotherapy alone. (2) B-09, is a trial to determine whether the anti-estrogen, Tamoxifen, when combined with chemotherapy, improves the results obtained with adjuvant chemotherapy alone. (3) B-07 and B-08 are closed to patient entry. The principal investigator is the chairman of the Stage III Breast Cancer Committee of the NSABP, which has developed a new protocol design for Stage III breast carcinoma.

20. TUMOR BANK

Sartorelli, A. C., Yale University, School of Medicine, Dept. of Pharmacology, *333 Cedar St., New Haven, Connecticut,* 06510, United States of America

The objectives and functions of this facility are: (a) to maintain a spectrum of transplanated tumors both in animals and in storage in a frozen state; (b) to provide assistance in the selection of an appropriate animal neoplasm for various studies in oncology, as well as sufficient cells to either accomplish the experiment, or in the case of instances where extremely large quantities of cells are required, enough neoplastic cells to inoculate a sufficient number of donor animals; (c) to assist in the conduct of experiments to measure the antineoplastic activity of tumor-inhibitory agents or combinations of agents, and (d) to serve to hold animals for a short period of time, to ensure optimal health prior to therapeutic experiments.

Forty-three murine tumor lines are maintained by the core facility, and are available for the use of all investigators in the Cancer Center. Selected tumors which are in great demand are kept in continuous passage in mice and others are retained stored in a frozen state. New lines are added as required by investigators.

21. CHEMOTHERAPY TISSUE CULTURE FACILITY

Cole, J. W., Yale University, School of Medicine, *333 Cedar St., New Haven, Connecticut,* 06510, United States of America

This proposal supports a facility designed for the preparation of tissue culture media. The passage of uninfected culture lines of various sorts and maintenance of viable frozen lines of a variety of normal cells and the availability of media, maintenance of frozen cells and large scale growth of cells for individual experiments are provided as services to members of the Cancer Center.

22. DEVELOPMENT AND CHARACTERIZATION OF CELL SUBSTRATES FOR UTILIZATION IN CANCER RESEARCH AND ALLIED STUDIES

Vedros, N., Nelson Rees, W., U.S. Dept. of Defense, Navy, United States of America

OBJECTIVES: The Cell Culture Laboratory (CCL) is physically located at the Naval Biosciences Laboratory (NBL), Oakland, California. This project includes the development and evaluation of cell substrates for the study of cancer viruses, development of large quantities of specific cell substrates, karyotyping of cell cultures, and performing biophysical, virological, and cytogenetic applied research.

MAJOR FINDINGS: During the reporting period, the contractor continued to initiate, grow, preserve, characterize, and distribute a variety of human and animal cells for utilization in cancer research. Procedures utilized are such that antibiotic-free cultivation is achieved in the majority of cases. Routine laboratory procedures are such that mycoplasma contamination occurs only at a very low frequency among the numerous cultures initiated, grown, and preserved in this laboratory.

During this reporting period, approximately 1,000 cell culture seed stocks (ampoules and flasks) were distributed to 100 individual scientists.

A number of valuable cell lines of tumor origin have been received from other laboratories and processed at CCL for distribution; among these were four of human origin. Approximately 20 laboratories have submitted 100 individual cell cultures for analysis of species and cell line purity. Approximately 33 percent were as purported and others involved intra- and inter-species contamination. Activities of this nature are projected to continue at the same or increased levels for the duration of the contract.

Morphologically abnormal cell lines are being compared to morphologically normal cells in terms of growth pattern, cell doubling time, saturation density, clonal growth on various substrates, karyology, and tumorigenicity in nude mice. Clonal growth studies are in progress on a variety of low passage, non-HeLa, human cancer cell lines in an effort to define the optimum nutrition and environmental conditions for culture of such cells.

Karyologic characterization of all cells maintained in the repository continues and specific collaborative programs requiring the use of karyologic data are in progress.

SIGNIFICANCE TO BIOMEDICAL RESEARCH: The contractor has an excellent tissue culture facility and is supplying cell cultures for cancer research studies to NCI investigators, among others. (Text Abridged.)

23. VIROLOGY, IMMUNOLOGY AND TISSUE CULTURE SUPPORT SERVICE

Ting, R. C., Biotech Research Lab. Inc., *12601 Twinbrook Pkwy., Rockville, Maryland,* 20852, United States of America

OBJECTIVE: Perform the following supportive services: (1) Immuno-biochemical diagnostic development for clinical application; (2) testing compounds selected by LTCB Staff for quantitative inhibition of transforming activity of sarcoma viruses; (3) providing tissue culture support to NCI Staff for cloning human leukemia and other cancer cells, for establishing skin fibroblasts in culture from selected leukemia patients, and for labeling mammalian cells with radioactive isotopes.

24. MELANOMA CELL VACCINE - ASSAYS FOR CYTOTOXICITY

Lauer, L. D., Litton Bionetics Inc., *5516 Nicholson Ln., Kensington, Maryland,* 20795, United States of America

OBJECTIVE: 1. Prepare batches of melanoma cell line RPMI-8072 grown in sterile PPLL-free suspension culture in McCoy'S 5A medium with human serum modified for suspension culture. Melanoma cells will be treated with approximately 2 units/10 to the 6th power cells of VCN under appropriate conditions to release maximal releasable sialic acid, but retain high cell viability. Appropriate amounts of frozen vaccine will be thawed, washed, suspended and brought to NIH for administration to patients. 2. Grow and provide batches of several other melanoma cell lines and other tumor cell lines. Be prepared to do all tissue cultures in such a way that the cells are PPLO-free and also be prepared to do appropriate studies and maneuvers to get rid of PPLO should it develop.

25. TISSUE CULTURE MEDIA FACILITY

Bertram, J. S., Roswell Park Memorial Inst., Dept. of Experimental Therapeutics, *666 Elm St., Buffalo, New York*, 14263, United States of America

This is part of a broader project. A summary of this subproject is not available.

26. TISSUE CULTURE FACILITY

Pagano, J. S., University of North Carolina, Chapel Hill Campus, School of Medicine, Dept. of Medicine, *Manning Dr., Chapel Hill, North Carolina*, 27514, United States of America

This is part of a broader project. A summary of this subproject is not available.

27. CELL PROCUREMENT AND SORTING

Higby, D. J., Roswell Park Memorial Inst., *666 Elm St., Buffalo, New York*, 14263, United States of America

This is part of a broader project. A summary of this subproject is not available.

28. CELL CULTURE BANK

Loh, K. K., University of Hawaii System, Manoa Campus, Pacific Biomedical Research Center, *2538 The Mall, Honolulu, Hawaii*, 96822, United States of America

This is part of a broader project. A summary of this subproject is not available.

29. CORE FACILITY - TISSUE CULTURE AND CELL BANK

Acton, R. T., University of Alabama in Birmingham, School of Medicine, Dept. of Microbiology, *1919 7th Ave. S., Birmingham, Alabama*, 35233, United States of America

This is part of a broader project. A summary of this subproject is not available.

30. CORE SERVICE - HUMAN TISSUE CULTURE FACILITY

Fahey, J. L., University of California, Los Angeles Campus, School of Medicine, Dept. of Microbiology & Immunology, *2025 Zonal Ave., Los Angeles, California*, 90024, United States of America

This is part of a broader project. A summary of this subproject is not available.

31. PROVISION OF TISSUES FOR TUMOR CELL BIOLOGY STUDIES

Sarngadharan, M. G., Litton Bionetics Inc., *5516 Nicholson Ln., Kensington, Maryland*, 20795, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

C. PROCUREMENT CENTERS FOR BODY FLUIDS FROM CANCER PATIENTS AND OTHER INDIVIDUALS

32. ESTABLISHMENT OF AN MRC SERUM AND BIOLOGICAL FLUIDS BANK FOR CANCER RESEARCH

Cooper, E. H., University of Leeds, Unit for Cancer Research, *Woodhouse Ln., Leeds LS2 9JT, England, United Kingdom*

OBJECTIVE: To collect and store specimens of serum and urine from patients with various types of cancer to provide material for evaluating biochemical tumor detection and monitoring systems.

APPROACH: The bank is mainly concerned with lymphoid malignancies and gastrointestinal and urological cancer.

PROGRESS: The bank is being used partially by the Unit for Cancer Research, and partially to supply other laboratories (e.g., evaluation of the immunological detection of prostatic acid phosphatase in conjunction with the Department of Medical Oncology, Charing Cross Hospital, London).

33. RETROSPECTIVE STUDIES ON SERA FROM CANCER PATIENTS - THE JANUS PROJECT

Pihl, A., Jellum, E., Orjaseter, H., Harvei, S., Universitetet i Oslo, Inst. of Pathology, Section A, *Rikshospitalet, Oslo 1, Norway*

OBJECTIVE: A) To search for possible serological abnormalities in clinically healthy people who later develop cancer, and B) to see if some, if any, serological changes may occur in the pre-clinical period, i.e., after the tumor has been formed but before the appearance of symptoms or signs.

APPROACH: To collect and store serum samples from a large number of clinically healthy people. The donors' identification numbers are matched continually against the cancer incidence files of the Norwegian Cancer Registry. All new cases appearing in the material during the ensuing years are reported to a committee, permitting the identification of earlier serum samples taken from these patients (in one series with an interval of one year).

PROGRESS: Some 70,000 serum samples have hitherto been collected and are kept deep-frozen. After 4 years, a wide variety of tumors have appeared in this material, totalling 416 cases. In a minor part of this material, the following analyses will be performed in order to study: 1) the pattern of low molecular substances (i.e., metabolites) by means of capillary gas chromatography/mass spectrometry data system (up to Mw 600); 2) the pattern of serum components shown by field ionization/mass spectrometry/data system, (Mw 50-2000); 3) substances revealed by pyrolysis/mass spectrometry/data system; 4) substances revealed by multiprotein analysis (the ISODALT system); 5) the pattern of some trace elements in these sera (dependent on certain allowances not yet available); and 6) multivariable data analysis.

We hope that the patterns of such data may help to detect possible precancerous changes in some clinically healthy individuals.

34. DEVELOPMENT OF GRANULOCYTE BANKING PROCEDURES

Persidsky, M. D., Ling, N., Inst. of Medical Sciences, Cryobiology, *2200 Webster St., Box 7999, San Francisco, California*, 94115, United States of America

Proposed research concerning the development of practical procedures for short-term and long-term banking of granulocytes effective for hematologic support of leucopenic patients is a continuation of our long-range program. Using our centrifugal elutriation method for isolation of pure granulocytes, we will test the following new approaches to improve granulocyte preservation such as: (1) Maintaining cells in a resting metabolic state by lactate inhibition of phosphofructokinase. (2) Maintaining intracellular levels of nucleotides (ATP and cyclic AMP). Restoration of nucleotides intracellularly by means of liposomes or glycerol will be studied. (3) Macromolecular plasma substitutes will be used in place of serum proteins in preservation medium. (4) Reduction of granulocyte damage due to intracellular release of lysosomal enzymes by lysosomal membrane stabilizers and/or enzyme inhibitors. (5) Regeneration of -SH groups of cells by sulfhydryl compounds after preservation. (6) Modification of granulocyte membrane lipids by increasing proportion of saturated lipids using liposomes. Also, we will investigate effects of various gels for stabilizing cell suspension during storage. Furthermore, we will examine several recent claims of successful recovery of human granulocytes after cryopreservation and will adopt any repeatable effective procedure as a base for improvement. Animal model, using rabbits, will be developed for testing in vivo granulocyte function.

35. SERUM FROM PATIENTS WITH BREAST LESIONS

Whitney, L. W., Wilmington Medical Center, *501 W. 14th St., Wilmington, Delaware*, 19899, United States of America

OBJECTIVES: Serve as a verification center for new breast cancer specific markers. The intent is to seek innovative approaches in need of large-scale field trials, rather than to add a few more cases to the already well-established studies. Develop specimen resources, i.e., blood from breast cancer patients and from controls, which include apparently normal women, women with benign disease of the breast, women with other types of cancer (gynecological), and women with other diseases.

36. SERUM FROM PATIENTS WITH BREAST LESIONS

Bowman, H. E., Butterworth Hospital, *100 Michigan St. N.E., Grand Rapids, Michigan*, 49503, United States of America

The objective of this program is to formally establish a means of providing the NCI with serum specimens taken from patients with both malignant and benign breast tumors. Specimens will be gathered from consenting patients both preoperatively and postoperatively.

37. NCI SERA BANK FACILITY FOR BREAST CANCER TASK FORCE

Schutt, A. J., Mayo Foundation, *200 1st St. S.W., Rochester, Minnesota,* 55901, United States of America

OBJECTIVE: Establish a sera bank facility for the Breast Cancer Task Force as an activity of the Central Mayo-NCI Serum Bank.

38. MAINTENANCE OF THE NCI SERUM BANK

Schutt, A. J., Mayo Foundation, *200 1st St. S.W., Rochester, Minnesota,* 55901, United States of America

OBJECTIVES: Establish and maintain a bank of sera from specified numbers of patients with cancer, with benign diseases, and from normal individuals. Establish and maintain a data bank system on the serum bank. Receive and ship specimens as directed by the project officer.

39. NCI IMMUNODIAGNOSTIC REFERENCE CENTER

Michaels, A., Meloy Lab. Inc., *6715 Electronic Dr., Springfield, Virginia,* 22151, United States of America

OBJECTIVES: 1. Radioimmunoassay for alpha fetoprotein on serum and other biological fluids; purification of alpha-fetoprotein. The contractor shall purify 30 mg of alpha-fetoprotein yearly using materials and techniques provided by NIH. 2. Radioimmunoassay for the beta chain of human chorionic gonadotropin hCG-B on 5,000 serum samples per year (15,000 tubes). Handling of samples: Pick up samples from NIH three times a week. Send mailing tubes to obtain samples and mail results to investigators. Must have storage for 30,000 frozen serum samples and provide identification and retrieval of the samples and correlate results on samples with patient diagnosis. 3. Tests for humoral immunocompetence of patients with cancer and immunodeficiency disease. 4. World Health Organization reference preparation: Distribute approximately 500 samples of international reference preparation as established by WHO or other appropriate agencies.

II. SOURCE FACILITIES FOR ANIMALS

A. SOURCE FACILITIES FOR RODENTS

40. BREEDING OF NUDE (NU-NU) MICE

Sebesteny, A., Fitzjohn, F. E., Imperial Cancer Research Fund, Animal Health Unit, *Lincoln's Inn Fields, London WC2A 3PX, England, United Kingdom*

Breeding colonies of nude (nu-nu) mice have been established in germfree isolators, SPF isolators (not exposed to human pathogens) and in the mouse SPF unit (exposed to human pathogens possibly carried by staff). Apart from pairs of homozygous male x heterozygous female, fully homozygous pairs are also used for breeding with success. The latter are thought to be superior as the possibility is excluded of a humoral thymic factor from the heterozygous mother inducing some development of the thymus of the fetuses in utero.

Nude mice are issued for use into SPF isolators or into rooms either on their own or in the company of ex-SPF or conventional mice. They survive for periods of over one year except in the company of conventional or infected ex-SPF mice when they succumb to Mouse Hepatitis Virus infection within two to three months. This can be confirmed by electronmicroscopy or by intraperitoneal injection of the suspension of affected livers into newborn non-nude mice. In this way they serve as sentinel mice for the detection of latent MHV infection and possibily of other infectious agents in various mouse rooms.

41. HYSTERECTOMY DERIVATION OF MICE AND RABBITS

Sebesteny, A., Menzies, J. D., Imperial Cancer Research Fund, Animal Health Unit, *Lincoln's Inn Fields, London WC2A 3PX, England, United Kingdom*

In order to eliminate infantile diarrhea and viral Mouse Hepatitis, which had appeared in the old SPF mouse colony, a new SPF colony has been established, housed in a newly constructed SPF unit. Unborn fetuses from each mouse strain were collected by aseptic hysterectomy and fostered on germ-free suckling mothers in a home-designed sterile surgical isolator with unidirectional air flow. After their freedom from all demonstrable organisms had been established, a mixture of five non-pathogenic organisms was given to start a new intestinal flora. All original mouse strains of the Fund, athymic nude (nu-nu) mice and 15 new strains of congenic mice have been established in the Unit and the introduction of further mouse strains is in progress. The health status of the Unit after 7 years is still found to be comparable with Grade 4 (top grade) in the Laboratory Animals Center Grading Scheme. Old infected stock have been eliminated from the premises and non-SPF mice obtained from outside sources for hysterectomy are confined in negative-pressure isolators.

The rabbit breeding colony was seriously affected with coccidiosis and was therefore eliminated. A new building was constructed suitable for the maintenance of SPF Dutch rabbits bought from outside and hysterectomy-derived New Zealand White rabbits. The latter were either hand-reared under germfree conditions or directly cross-fostered to the imported SPE Dutch suckling does. A colony of New Zealand and of NZW-Dutch hybrid rabbits has now been established. On laboratory and clinical evidence they are, after five years, still free from specified pathogens that include pasteurella and coccidia.

42. CONGENITALLY ATHYMIC NZB MICE

East, J., Jenkinson, A. M., Imperial Cancer Research Fund, Immunopathology Laboratory, *Lincoln's Inn Fields, London WC2A 3PX, England, United Kingdom*

'Nude' mice are not only hairless but also lack a thymus and are, therefore, congenitally deficient in respect of those immunological functions normally mediated by thymus-derived (T) lymphocytes. The mutation, designated nu, is inherited as a single autosomal recessive gene with complete penetrance and so can be introduced into a variety of inbred mouse strains by a relatively simple but time-consuming breeding program. This consists of repeated cycles of outcrossing and intercrossing, and twelve such cycles are required before the nude (nu/nu) mice can be considered congenic with the inbred partner.

We were, therefore, extremely fortunate to be offered progeny of the 11th, backcross generation to the NZB strain by the MRC Laboratory Animals Center, Carshalton, and production of NZB-nu/nu mice is now continuing as an adjunct to our investigations of thymic involvement in the spontaneous autoimmune hemolytic disease (AIHD) of the NZB strain. However, the life span of nude mice is often curtailed by a variety of intercurrent infections, although it may be extended if they are handled in strict isolation or bred in a germ-free environment. We have already found that NZB-nu/nu mice are much less viable than those of other strains and none have lived longer than 2 weeks. It may, therefore, never be possible to maintain them for a period sufficient to determine whether or not they develop the AIHD shown by heterozygous (nu/plus) or normal (plus/plus) NZB mice. The intractability of the problem is emphasized by the pathogen-free NZB nudes rarely survived for more than 3 weeks (Gershwin et al., Journal of Immunology, 1979, 122, 2020). As an alternative, we have now turned our attention to hybrids produced by mating NZB heterozygotes (nu/plus) to BALB/c-nu/nu partners. The nude F1 progeny are much more robust and some have survived for 9 months.

43. HOLDING FACILITY FOR SMALL LABORATORY ANIMALS

Golway, P. L., Litton Bionetics Inc., *5516 Nicholson Ln., Kensington, Maryland,* 20795, United States of America

OBJECTIVES: Provide holding facilities for 5,000 mice, 500 rats, 500 hamsters, and 500 guinea pigs, in addition to a laboratory for the manipulation of the animals. Perform routine animal inoculations for purposes of immunization. Monitor experimental animals for general health by measuring body weight and palpation for tumors or splenomegaly. Provide daily transportation of cage animals to and from NIH laboratories.

44. INDUCTION OF PLASMA CELL TUMORS IN MICE

McGowan, M. J., Litton Bionetics Inc., *5516 Nicholson Ln., Kensington, Maryland,* 20795, United States of America

The workscope will cover the transplantation, induction, and preservation of plasma cell tumors in mice; the characterization of myeloma proteins; the breeding and development of congenic mouse strains; and the maintenance of a wild mouse breeding colony.

45. RESEARCH ACTIVITIES AND BREEDING COLONIES

Davis, W. C., Washington State University, School of Veterinary Medicine, Dept. of Veterinary Microbiology & Pathology, *Pullman, Washington*, 99163, United States of America

OBJECTIVE: Develop a colony of mice as enhancement models in order to assess how antibody interferes with the cell mediated immune response against naturally occurring tumors.

APPROACH: A colony of mice will be developed and used as a particularly sensitive method of analyzing the effect of a restricted population of antibodies in the host response to specific tissue antigens.

46. HAIRLESS MICE FOR UV CARCINOGENESIS STUDIES

Forbes, P. D., Temple University, School of Medicine, Dept. of Dermatology, *3322 Broad St., Philadelphia, Pennsylvania*, 19122, United States of America

OBJECTIVES: Determine the comparative UV photocarcinogenic sensitivity of selected stocks and strains of nude mice. Characterize several immunologic traits of the selected animals. Evaluate breeding efficiency of stocks or strains which might be used as preferred test organisms for photocarcinogenesis.

47. THE GENETICS OF THE MOUSE

Prehn, R. T., Jackson Lab., *Box 258, Bar Harbor, Maine*, 04609, United States of America

The continuing aim of studies on the genetics of the mouse is to provide a more and more versatile and efficient tool for biological research in mammals, including such fields as cancer biology, mammalian genetics, physiology, pathology, biochemistry, immunology, and behavior. The Mouse Mutant Stocks Center (MMSC) exists for the purpose of maintaining useful mutations and characterizing new ones. Over half of the known mutations in the mouse are available at the Jackson Laboratory and half of these are held in the MMSC. The Laboratory also has a large variety of stocks carrying chromosomal rearrangements, many of which are in the colony of the Staff Supervisor of this grant. Because of this large variety of strains and mutant stocks most of the known polymorphic loci of the mouse (about 250) are also available at the Laboratory. When new mutations arise they are characterized for thier physiological or anatomical effects, their chromosomal location, and their linkage relationships with other genes. These analyses can make use of the wide variety or mutant stocks, trust stocks, linkage testing stocks, chromosomal rearrangement stocks and polymorphisms that are available at the Laboratory. All chromosomes of the mouse now have genes assigned to them. Of the over 600 mutant or polymorphic loci known in the mouse, 465 have been located on the linkage map, many by personnel of the Mouse Mutant Stocks Center.

48. NATIONAL CONGENIC MOUSE SUPPLY - MULTICATEGORY RESEARCH

Boyse, E. A., Sloan Kettering Inst. for Cancer Research, *410 E. 68th St., New York, New York*, 10021, United States of America

During the last ten years we have produced several unique strains of congenic mice. Because these have found cogent uses in several fields, notably immunology and its several sub-divisions, the genetics of cellular differentiation, and leukemia, we have had to expend much time, money and effort in supplying these mice to other research groups within and outside the USA. The demand for other such congenic strains which we are now deriving will be of an equal volume, as the value of the strains in approaching questions of central relevance to molecular biology is becoming appreciated. It has been very costly for us to meet these obligations to outside investigators, and it will continue to be so. As there is no feasible way of recovering these costs from the outside investigators themselves, we ask for support of our specialized Mouse Breeding Unit on the grounds that it is, and will continue to be, a unique general resource, freely available to investigators of many research disciplines and interests.

49. PROGRAM PROJECT ON ATHYMIC MICE AND HUMAN TUMORS

Kaplan, N. O., Sato, G. H., Masui, H., Rizzino, A. A., Buonassisi, V., Howell, S. B., University of California, San Diego Campus, School of Medicine, Dept. of Chemistry, *P.O. Box 109, La Jolla, California*, 92093, United States of America

A colony of approximately 5,500 athymic mice has been established. Thirty different human tumors are now being carried in the athymic mice. Studies on the factors which regulate growth of the human tumors in the athymic mice are being pursued. Some of the human tumors, after growth in the athymic mouse, have been established in culture. Chemotherapeutic studies using the athymic mouse human tumor system as a model for chemotherapeutic treatment in patients have been initiated. Conditions which will promote optimum growth of the human tumors grown in tissue culture are also being investigated. The effect of the human tumors on the athymic mouse immune system is also being studied with respect to the induction of mouse lymphomas.

BIBLIOGRAPHIC REFERENCES: L.J. Arnold, Jr., A. Dagan, J. Gutheil and N.O. Kaplan. Antineoplastic activity of poly-l-lysine with some ascites tumor cells. Proc. Natl. Acad. Sci. USA 76: 3246 (1979). J.W. Gautsch, A.F. Knowles, F.C. Jensen and N.O. Kaplan. Highly efficient induction of type C retroviruses by a human tumor in athymic mice. Proc. Natl. Acad. Sci., USA, 1980, in press.

50. CORE - MOUSE COLONY

Boyse, E. A., Sloan Kettering Inst. for Cancer Research, *410 E. 68th St., New York, New York*, 10021, United States of America

This is part of a broader project. A summary of this subproject is not available.

51. MOUSE TUMOR COLONY

Handschumacher, R. E., Yale University, School of Medicine, Dept. of Pharmacology, *333 Cedar St., New Haven, Connecticut*, 06510, United States of America

This is part of a broader project. A summary of this subproject is not available.

52. CORE FACILITY - IMMUNOCOMPROMISED MICE

McGhee, J. R., University of Alabama in Birmingham, School of Medicine, Dept. of Microbiology, *1919 7th Ave. S., Birmingham, Alabama*, 35233, United States of America

This is part of a broader project. A summary of this subproject is not available.

53. NUDE MOUSE COLONY

Koprowski, H., Wistar Inst. of Anatomy & Biology, *36th & Spruce Sts., Philadelphia, Pennsylvania*, 19104, United States of America

This is part of a broader project. A summary of this subproject is not available.

54. MAINTENANCE OF AN ANIMAL HOLDING FACILITY

Hernandez, D. M., Cor Bel Lab. Inc., *5708A Frederick Ave., Rockville, Maryland*, 20852, United States of America

OBJECTIVE: Provide the necessary facilities; provide professional, technical, and support personnel; and provide support services to maintain a colony of up to 10,000 mice, 500 rats, and 20 rabbits in accordance with the RFP. Up to 260 breeding cages of special congenic strains of mice will be maintained as requested by the Project Officer. Technical manipulations will include bleeding and injections (mice, rabbits, and rats), palpation of mice for detection of tumors, and skin grafting of mice. Transportation of animals and frozen samples will be provided twice daily, Monday through Friday, to the Immunology Branch laboratories. Complete records of all tasks will be maintained and reports will be sent as required to the Project Officer and other appropriate individuals.

55. PRODUCTION OF AGED RATS

Harlan, H. P., Harlan Industries Inc., *298 E. County Line Rd., Box 29176, Indianapolis, Indiana*, 46229, United States of America

OBJECTIVE: Establish an aging colony for both ACI Inbred Strain and Sprague-Dawley Outbred Stock male rats. Each of the two colonies will eventually contain a constant population level of approximately 2,000 animals, half of which shall remain virgins and the other half of which shall experience the highest feasible rate of sexual activity for as long as possible. At the direction of the Project Officer, the aged males at 24 months of age, or before if required, shall be distributed to contract laboratories engaged in the study of prostate carcinogenesis.

56. PRODUCTION OF RATS WITH ISOLOGOUSLY TRANSPLANTED R3327

Altman, N. H., Papanicolaou Cancer Research Inst., *1155 14th St. N.W., Box 23-6188, Miami, Florida*, 33136, United States of America

The Papanicolaou Cancer Research Institute (PCRI) maintains the Dunning R3327 tumor which is a hormone responsive, slow growing adenocarcinoma. This tumor is transplanted into Copenhagen x Fischer F1 males for use in prostatic adenocarcinoma research projects. The PCRI maintains breeding colonies of Copenhagen rats and Fischer 344 rats to produce the hybrids. Tumor-bearing rats, uninoculated controls and frozen tumor tissue are supplied to investigators. A quality control program insures that the biological characteristics of the original tumor are maintained. A joint project carried out in cooperation with several other investigators is under way to fully define the tumor model system.

57. OPERATION OF GENETIC PRODUCTION CENTER FOR RODENTS

Harlan, H. P., Harlan-Sprague Dawley, *Box 4220, Madison, Wisconsin*, 53711, United States of America

OBJECTIVE: Provide for the maintenance of approximately 850 mouse cage equivalents as foundation colonies in associated flora isolators and of 4,000 mouse cage equivalents under strict barrier conditions as pedigreed expansion colonies. Animals will be delivered to consignees at no cost as designated by the Project Officer. The contractor will be producing genetically pure animals under germ-free conditions.

58. GENETIC CENTER FOR RODENTS IN BIOCONTAINMENT ENVIRONMENT

Russell, J. D., Simonsen Lab. Inc., *Day Rd., Gilroy, California*, 95020, United States of America

This contract receives inbred pedigreed litters from the NIH Repository and rederives pure inbred strains into defined flora isolators. Approximately 2000 isolator cages are used to maintain pedigreed foundation mouse colonies. Also, 8000 barrier room cages are used to house pedigreed expansion colonies of inbred strains which are supported by the isolator foundation colonies. These animals are then sent to other contractors for hybrid production or to research laboratories for experimental investigations.

59. ESTABLISHMENT OF A RODENT PRODUCTION CENTER

Harlan, H. P., Harlan Industries Inc., *298 E. County Line Rd., Box 29176, Indianapolis, Indiana*, 46229, United States of America

This contract maintains approximately 6000 mouse cage equivalents under a modified conventional environment. Strains carrying particular viruses, which would be lost if the animals were rederived, are maintained within this contract. In addition to mice, our only hamster colony is maintained under this contract. Animals from this effort are supplied to various research laboratories for experimental investigations.

60. ESTABLISHMENT AND OPERATION OF A RODENT PRODUCTION CENTER

Athey, W., Microbiological Associates, *10880 Wilshire Blvd., Los Angeles, California*, 90024, United States of America

The primary purpose for the enlarged supply of clean inbred rodents from the rodent production center contracts is to: maintain the approximately 100,000 breeding animals for hybrid production e.g., B6D2F1, CD2F1 (these hybrids are used for cancer research throughout the DCP program); supply cancer research laboratories with the large number of clean inbred animals needed for tumor transplantation. Obviously, it would be impossible to maintain the continuity of the experimental DCT cancer research program without the contribution of the Rodent Production Center contracts.

61. ESTABLISHMENT AND OPERATION OF A RODENT PRODUCTION CENTER

Otis, A. P., Charles River Breeding Lab. Inc., *251 Ballardvale St., Wilmington, Massachusetts*, 01887, United States of America

The primary purpose of the enlarged supply of clean inbred rodents from the rodent production center contracts is to: maintain the approximately 100,000 breeding animals for hybrid production e.g., B6D2F1, B6C3F1, which are used for cancer research throughout the DCT program; and supply cancer research laboratories with the large number of clean inbred animals needed for tumor transplantation. Obviously, it would be impossible to maintain the continuity of the experimental DCT cancer research program without the contribution of the Rodent Production Center Contracts.

62. ESTABLISHMENT AND OPERATION OF A RODENT PRODUCTION CENTER

Russell, J. D., Simonsen Lab. Inc., *Day Rd., Gilroy, California*, 95020, United States of America

The primary purpose of the enlarged supply of clean inbred rodents from the rodent production center contracts is to: maintain the approximately 100,000 breeding animals for hybrid production e.g., B6D2F1, B6C3F1,CD2F1, to be used for cancer research throughout the DCT program; and supply cancer research laboratories with the large number of clean inbred animals needed for tumor transplantation. Obviously, it would be impossible to maintain the continuity of the experimental DCT cancer research program without the contribution of the Rodent Production Center contracts.

63. ESTABLISHMENT AND OPERATION OF A RODENT PRODUCTION CENTER

Harlan, H. P., Harlan Industries Inc., *298 E. County Line Rd., Box 29176, Indianapolis, Indiana*, 46229, United States of America

The primary purpose for the enlarged supply of clean inbred rodents from the rodent production center contracts is to: maintain the approximately 100,000 breeding animals for hybrid production e.g., B6D2F1, CD2F1 (these hybrids are used for cancer research throughout the DCT program); and supply cancer research laboratories with the large number of clean inbred animals needed for tumor transplantation. Obviously, it would be impossible to maintain the continuity of the experimental DCT cancer research program without the contribution of the Rodent Production Center contracts.

64. RODENT PRODUCTION COLONIES FOR NCI

Harlan, H. P., Harlan Industries Inc., *298 E. County Line Rd., Box 29176, Indianapolis, Indiana*, 46229, United States of America

OBJECTIVE: Provide, operate, and maintain a rodent production center by providing animals to the Bioassay Testing Program. This contractor has assumed the obligation to provide animals (rats and mice) to individual bioassay contractors for use in the screening program for carcinogenicity testing of chemicals.

65. RODENT PRODUCTION COLONIES FOR NCI

Russell, J. D., Simonsen Lab. Inc., *Day Rd., Gilroy, California*, 95020, United States of America

OBJECTIVE: Provide, operate, and maintain a rodent production center by providing animals to the Bioassay Testing Program. This contractor has assumed the obligation to provide animals (rats and mice) to individual bioassay contractors for use in the screening program for carcinogenicity testing of chemicals.

66. RODENT PRODUCTION COLONIES FOR NCI

Otis, A. P., Charles River Breeding Lab. Inc., *251 Ballardvale St., Wilmington, Massachusetts*, 01887, United States of America

OBJECTIVE: Provide, operate, and maintain a rodent production center by providing animals to the Bioassay Testing Program. This contractor has assumed the obligation to provide animals (rats and mice) to individual bioassay contractors for use in the screening program for carcinogenicity testing of chemicals.

67. ESTABLISHMENT AND OPERATION OF A RODENT PRODUCTION CENTER

Cox, E. J., Lab. Supply Co. Inc., *5010 Mooresville Rd., Indianapolis, Indiana*, 46241, United States of America

This contract calls for the maintenance of 4500 barrier production cages. Breeding stock is received weekly from a Primary Genetic Center contractor and such breeders are mated at this contract facility. The size of the breeding colonies and the strains to be produced are determined by the Project Offi-

cers; these decisions are based on program needs. All colonies are rotated on a 30 week cycle. The offspring are shipped to the many NIH contract and grantee laboratories.

68. OPERATION OF A RODENT PRODUCTION CENTER

Curlee, J., Southern Animal Farms, *Prattville, Alabama,* 36067, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

69. PATHOLOGY SUPPORT FOR CARCINOGENESIS TESTING PROGRAM

Schiller, D., Tracor Jitco Inc., *1776 E. Jefferson St., Rockville, Maryland,* 20852, United States of America

OBJECTIVES: Provide pathology support services in rodent bioassays. Provide for storage facilities (repository) for at least three million microscopic slides and a storage area for wet tissues, paraffin blocks, pathology, narrative computer tables and forms, and other tabular data from past, present, and future CGT testing laboratories.

70. CORE - ANIMAL FACILITIES (MICE)

Stolfi, R. L., Catholic Medical Center of Brooklyn & Queens Inc., Cancer Research Laboratory, *88 25 153rd St., Jamaica, New York,* 11432, United States of America

This is part of a broader project. A summary of this subproject is not available.

B. SOURCE FACILITIES FOR NON-HUMAN PRIMATES AND OTHER EXPERIMENTAL ANIMALS

71. MAINTENANCE OF CHIMPANZEES FOR CANCER RESEARCH

Graham, C., New Mexico State University, Las Cruces Campus, Graduate School, *University Park, Las Cruces, New Mexico,* 88003, United States of America

OBJECTIVES: Provide facilities with the capability for holding and maintaining nine chimpanzees of various ages. Provide an isolated area for holding chimpanzees involved in experiments with chemical carcinogens. Provide support services that will include exemplary housing quarters, expert veterinary care, and the availability of experts to administer carcinogens and x-irradiation. Test animals and controls will be cared for and monitored by experienced veterinary and medical staff. Provide support laboratory services that will include hematology, surgery, clinical chemistry, pathology, and endocrinology. Maintain all records on test animals and transmit them regularly to the NCI Project Officer.

72. OPERATION OF FACILITY TO MAINTAIN NONHUMAN PRIMATES

Cicmanec, J. L., Litton Bionetics Inc., *5516 Nicholson Ln., Kensington, Maryland,* 20795, United States of America

OBJECTIVE: Continue to breed and maintain a variety of species of nonhuman primates that will provide prenatal, neonatal, juvenile, and mature animals for cancer virus research. The contract requires the breeding and maintenance of such animals as Macaca mulatta (rhesus monkey), Aotus trivirgatus (owl), Saguinus oedipus (cottontopped marmoset), and Hylobates lar (white-handed gibbon). Appropriate facilities will be provided to manipulate experimental animals and quarantine animals in addition to breeding activities.

73. BOVINE LEUKEMIA HERDS FOR RESEARCH

Marshak, R. R., Abt, D. A., Ferrer, J., University of Pennsylvania, School of Veterinary Medicine, Dept. of Clinical Studies, *39th & Pine, Philadelphia, Pennsylvania,* 19104, United States of America

OBJECTIVE: Continue development and maintenance of our bovine leukemia research herds. These consist of a critical number of dairy cattle herds which, during the past 14 years, have been maintained in a highly defined state by regular periodic blood counts, pedigree analysis and clinical surveillance. The herds fall into 4 categories: Leukemia-free; single case; multiple case; and contact herds. All data are transformed into coded form for storage on machine punch cards and magnetic tape utilizing multiple card coding system.

74. ANIMAL NEOPLASM REGISTRY, ALAMEDA AND CONTRA COSTA COUNTIES, CALIFORNIA

Schneider, R., University of California, Davis Campus, School of Veterinary Medicine, Dept. of Epidemiology & Preventive Medicine, *Davis, California,* 95616, United States of America

OBJECTIVE: Help determine the etiology and pathogenesis of various cancers through the comparative approach of comparing naturally occurring cancers in various species including man.

APPROACH: A population based on animal tumor registry was instituted in a geographic area where a human population based tumor registry was also established. Thus, human and animal cancer cases are available for comparison from the same geographic area. The major types of studies are characterization of animal cancers such as crude and age-adjusted incidence rates, including age-, sex-and breed-specific; human-animal comparisons such as a comparison of age and sex-specific incidence rate patterns for clues to possible modifying patterns of environmental effects and etiological studies such as seeking factors or variables that may be affecting the risk or occurrence of various cancers in animals and relating them to human cancer occurrence.

75. OPERATION OF THE FREDERICK CANCER RESEARCH CENTER (FCRC)

Hanna, M. G., Litton Bionetics Inc., *5516 Nicholson Ln., Kensington, Maryland,* 20795, United States of America

A five year duration contract providing for the continued management, operation, and maintenance of the Frederick Cancer Research Center (FCRC), Frederick, Maryland, by Litton Bionetics, Inc., for the National Cancer Institute. Research studies and investigations encompass a broad spectrum of cancer researches, both basic and applied, involving several program areas such as viral oncology, chemical carcinogenesis, basic research, animal holding, breeding and diagnostic procedures, biohazard and environmental control, cancer treatment, and special histopathology, plus NINCDS support.

76. MAINTENANCE OF TUMORED LABORATORY ANIMAL MODELS

Golway, P. L., Litton Bionetics Inc., *5516 Nicholson Ln., Kensington, Maryland,* 20795, United States of America

The objective of the project is to provide research animal services to support intramural research under Clinical Oncology Program, DCT, NCI.

77. ANIMAL BREEDING

Koprowski, H., Wistar Inst. of Anatomy & Biology, *36th & Spruce Sts., Philadelphia, Pennsylvania,* 19104, United States of America

This is part of a broader project. A summary of this subproject is not available.

78. PROVISION OF ANIMAL FACILITIES FOR VIRAL CANCER RESEARCH

Sarngadharan, M. G., Litton Bionetics Inc., *5516 Nicholson Ln., Kensington, Maryland,* 20795, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

79. MAINTENANCE OF ANIMAL FACILITIES

Prehn, R. T., Inst. for Medical Research of Santa Clara County, *751 S. Bascom Ave., San Jose, California,* 95128, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

80. CORE - CENTRAL ANIMAL FACILITIES

Hutchinson, W. B., Fred Hutchinson Cancer Research Center, *1124 Columbia St., Seattle, Washington,* 98104, United States of America

This is part of a broader project. A summary of this subproject is not available.

81. CORE ANIMAL FACILITIES

Kenyon, A. J., Sloan Kettering Inst. for Cancer Research, *410 E. 68th St., New York, New York,* 10021, United States of America

This is part of a broader project. A summary of this subproject is not available.

82. ANIMAL FACILITY - CORE

Hunt, C. E., University of Alabama in Birmingham, School of Community & Allied Health, Dept. of Nutrition Sciences, *Tidwell Hall BOO6, University Station, Birmingham, Alabama,* 35294, United States of America

This is part of a broader project. A summary of this subproject is not available.

83. ANIMAL CORE FACILITY

Calabresi, P., Roger Williams General Hospital, Section of Medicine, *825 Chalkstone Ave., Providence, Rhode Island,* 02908, United States of America

This is part of a broader project. A summary of this subproject is not available.

84. ANIMAL CORE FACILITY

Marks, P. A., Columbia University, College of Physicians & Surgeons, Dept. of Medicine, *630 W. 168th St., New York, New York,* 10032, United States of America

This is part of a broader project. A summary of this subproject is not available.

85. ANIMAL SUPPORT FACILITIES

Jonas, A. M., Yale University, School of Medicine, Dept. of Comparative Medicine, *333 Cedar St., New Haven, Connecticut,* 06510, United States of America

This is part of a broader project. A summary of this subproject is not available.

86. ANIMAL FACILITIES

Eaton, G. J., Inst. for Cancer Research, *7701 Burholme Ave., Philadelphia, Pennsylvania,* 19111, United States of America

This is part of a broader project. A summary of this subproject is not available.

87. ANIMAL FACILITIES

Kanter, P., Roswell Park Memorial Inst., Dept. of Experimental Therapeutics, *666 Elm St., Buffalo, New York,* 14263, United States of America

This is part of a broader project. A summary of this subproject is not available.

88. ANIMAL FACILITY

Gillette, R. W., University of Hawaii System, Manoa Campus, Pacific Biomedical Research Center, *2538 The Mall, Honolulu, Hawaii,* 96822, United States of America

This is part of a broader project. A summary of this subproject is not available.

89. ANIMAL AND LABORATORY ISOLATION FACILITY

Bigner, D. D., Duke University, School of Medicine, Dept. of Pathology/Surgery, *Box 3711, Durham, North Carolina,* 27710, United States of America

This is part of a broader project. A summary of this subproject is not available.

90. ANIMAL COLONY

Owens, A. H., Johns Hopkins University, School of Medicine, Dept. of Medicine, *725 N. Wolfe St., Baltimore, Maryland,* 21205, United States of America

This is part of a broader project. A summary of this subproject is not available.

III. OTHER RESEARCH RESOURCES AND SERVICES

A. FACILITIES FOR PRODUCTION AND TYPING OF ONCOGENIC VIRUSES

91. VIRUS PROCESSING AND PRODUCTION FACILITY

Lemp, J. F., Electro Nucleonics Lab. Inc., *4809 Auburn Ave., Bethesda, Maryland,* 20014, United States of America

The purpose of this project is to maintain a facility for large scale production and purification of oncogenic and/or suspected oncogenic viruses and also for processing of large volume of virus-containing fluids supplied by other NCI designated laboratories or investigators.

92. LARGE SCALE TISSUE CULTURE VIRUS PRODUCTION

Wolff, J. S., Pfizer, Inc., *199 Maywood Ave., Maywood, New Jersey,* 07607, United States of America

OBJECTIVES: 1. Provide a comprehensive, multi-faceted service facility for the production, purification, and distribution of large volumes of selected oncogenic and suspected oncogenic viruses, tissue culture cell lines, cellular antigens, and antisera to various production viruses. Production or preparation of these materials should be assisted by appropriate laboratory elements responsible for process improvement, product standardization, production monitoring, and quality control testing. 2. Perform appropriate service functions and characterization of materials as requested by the NCI Project Officer. These characterizations may require electron microscope assays, biochemical activity. Significant attention should be given to the preparation of a timetable for the initiation of the work scope to reach the full productivity or capability requested.

93. STUDIES ON HEPATITIS B VIRUS AND VARICELLA-ZOSTER VIRUS

Gelb, L. D., Washington University, School of Medicine, Dept. of Internal Medicine, *660 S. Euclid Ave., St. Louis, Missouri,* 63110, United States of America

This is part of a broader project. A summary of this subproject is not available.

B. PREPARATION AND ANALYSIS OF CHEMICALS AS POTENTIAL THERAPEUTIC AGENTS OR REFERENCE CARCINOGENS

94. SYNTHESIS OF SESBANINE, A CYTOTOXIC ALKALOID

Clardy, J. C., Cornell University, Ithaca Campus, School of Arts & Sciences, Dept. of Chemistry, *Ithaca, New York,* 14850, United States of America

Sesbanine is a rare metabolite of Sesbania drummondii which shows promising activity in various anticancer agent screens. The limited amount of naturally occurring material has precluded thorough testing. The purpose of this project is to complete the total synthesis of sesbanine and some analogues.

BIBLIOGRAPHIC REFERENCES: Sesbanine, a Novel Cytotoxic Alkaloid from Sesbania drummondii, Richard G. Powell, Cecil R. Smith, Jr., David A. Muthard and Jon Clardy, J. Amer. Chem. Soc., 1979, 101, 2784. The Synthesis of Sesbanine, C. Affentranger, S. Donovan and Jon Clardy, Tet. Lett., 1980., in press.

95. DEVELOPMENT OF SYSTEM FOR IDENTIFYING DRUGS

Tate, F. A., Chemical Abstracts Service, *2540 Olentangy River Rd., Columbus, Ohio,* 43202, United States of America

OBJECTIVES: Support the installation effort for the Drug Research and Development Chemical Information System (DR and D CIS). Operate the automated DR and G CIS being developed by University of Pennsylvania under contract CM33719. Conduct certain research studies and provide certain consultation to NCI, as called for.

96. ACQUISITION OF CHEMICALS AND DRUGS FOR CANCER CHEMOTHERAPY

Starks, F. W., Starks Associates Inc., *1280 Niagara St., Buffalo, New York,* 14213, United States of America

This contract is in support of DS and CB's fundamental responsibility to acquire selected novel synthetic compounds for evaluation as potential anticancer agents - the initial step in the NCI's Linear Array for Drug Development.

The major focus of this contract is the active solicitation, acquisition and management of approximately 13,500 compounds per year of diverse structural types. These compounds are selected by DS and CB from a much larger pool of compounds provided through this contract in quantities adequate for the primary anticancer screen. Many new leads are identified, and this contract acquires a significant portion of the larger samples needed for secondary screening (Tumor Panel).

97. ANALYZE PROTEINACEOUS SUBSTANCES

Montgomery, R., University of Iowa, School of Medicine, Dept. of Biochemistry, *Oakdale, Iowa*, 52319, United States of America

The DCT, NCI, is engaged in the discovery and development of new substances with potential as antitumor agents. The search for new substances includes both synthetic and naturally occurring compounds of diverse structure. Developmental activities include preparation of significant quantities, analysis of these substances, and development and production of injectable pharmaceutical dosage forms. Further development and evaluation of these substances in larger animals and ultimately in man requires characterization of these agents. Suitable qualitative and quantitative methods must be developed to ascertain the purity and quality of this material from batch to batch in both bulk form and pharmaceutical dosage forms. About two or three compounds will require characterization annually. Most compounds will be proteinaceous and may include largomycin, interferon, lentinin, etc.

98. INTERACTION OF ANTHRACYCLINE DRUGS WITH DNA

Wilson, W. D., Georgia State University, School of Arts & Sciences, Dept. of Chemistry, *33 Gilmer St. S.E., Atlanta, Georgia*, 30303, United States of America

The interaction of anthracycline drugs and selected model compounds with DNA will be investigated by physical techniques including 31P,13C, and 1H NMR, viscosity, u.v.-visible spectroscopy, ultracentrifugation, and equilibrium dialysis. The general goal of these studies is to evaluate structural and thermodynamic aspects of the DNA-anthracycline in solution. Specific experiments with selected DNA samples are designed to answer questions about anthracycline binding specificities with DNA. For example, viscosity measurements with closed circular superhelical DNA will allow calculation of unwinding angles for anthracyclines while equilibrium dialysis measurements with T4 bacteriophage DNA will help in determining major versus minor groove binding of these drugs.

BIBLIOGRAPHIC REFERENCES: Analysis of Cooperativity and Ion Effects in the Interaction of Quinacrine with DNA, W. David Wilson and Irene G. Lopp, Biopolymers, 18, 3025 (1979). Dimerization of Coralyne and Its Propyl Analogue and Their Association with DNA, Alice N. Gough, Robert L. Jones, and W. David Wilson, J. Med. Chem., 22, 1551 (1979).

99. ANTITUMOR COMPOUNDS FROM NORTH AMERICAN PLANTS

Stermitz, F. R., Colorado State University, School of Natural Sciences, Dept. of Chemistry, *Fort Collins, Colorado*, 80523, United States of America

Alkaloids and cytotoxic components of Zanthoxylum (Fagara) species from Puerto Rico, Mexico and Central America will be isolated and their structures determined. Cytotoxicity and antitumor bioassays will be used to screen sub-alpine plants for possible antitumor agents. Active compounds from the positive plants will be isolated and their structures determined.

BIBLIOGRAPHIC REFERENCES: F.R. Stermitz, L. Castedo and D. Dominguez, Magnoflorine and N,N-dimethylindcarpine, J. Natural Products, 43, in press (1980). J.A. Swinehart and F.R. Stermitz, Bishordeninyl Terpene Alkaloids and other Constituents of Zanthoxylum culantrillo and Z. Coriaceum, Phytochemistry, 19, in press (1980).

100. IN VIVO SCREENING PROGRAM

Cobb, W. R., E G & G Inc., *57 Union St., Worcester, Massachusetts*, 01608, United States of America

OBJECTIVES: Receive, maintain, and experimentally use rodents (largely mice). Propagate and maintain tumor stock in vivo. Prepare materials for testing. Administer test materials to tumor-bearing animals. Measure test activity using specified parameters of effects. Determine test material activity. Collect and summarize data as specified. Report results in the manner and frequency as specified in the contract. Upon specific request, test new and older active drugs to determine the influence of factors which might modify 'activity' such as the formulation for injection (vehicles, physical state, pH, etc.), the treatment schedule, the route of administration, the site to tumor implantation, etc.

101. SYNTHESIS OF POLYCYCLIC HYDROCARBON DERIVATIVES

Engel, J. F., Midwest Research Inst., *425 Volker Blvd., P.O. Box 27-303, Kansas City, Missouri*, 64180, United States of America

The goal of this program is the synthesis, purification, and characterization of selected derivatives (primarily oxygenated derivatives) of polynuclear aromatic hydrocarbons in gram quantities. The types of compounds include dihydrodiols; phenols; quinones; diolepoxides; epoxides; dialdehydes resulting from the cleavage of vicinally disubstituted oxygenated derivatives, alkyl- and hydroxyalkyl-substituted parent hydrocarbons; conjugated derivatives (chemical or biosynthetic) such as glutathiones, glucuronides and sulfates; and labeled (3H, 13C, 14C) analogs. The compounds are urgently required in carcinogenesis research as authentic standards and substrates to aid in the elucidation of the pathways of carcinogen metabolism, activation, and molecular mechanism of action. Individually, few scientists have the experience necessary to successfully synthesize even one of these compounds.

In addition, this program supports the activities of the Carcinogenesis Standard Carcinogen Reference Repository by carrying out resyntheses of compounds upon request and preparing radiolabeled substances, and also preparation of derivatives of polycyclic hydrocarbons for the National Institute of Environmental Health Sciences via an Interagency Agreement.

Some of the selected compounds have previously been prepared by unequivocal procedures in substantial quantity; others have been prepared by questionable methods, or in very small amounts, or by methods unsuited to scale-up, or the products have not been adequately characterized; others have never been prepared. The overall objective of this project is the preparation of the selected compounds by unequivocal methods to produce gram quantities of high purity and well-characterized materials.

102. SYNTHESIS OF SELECTED CHEMICAL CARCINOGENS

Heys, J. R., Midwest Research Inst., *425 Volker Blvd., P.O. Box 27-303, Kansas City, Missouri*, 64180, United States of America

Prepare selected chemicals, carcinogens, and certain of their derivatives for the Chemical Carcinogen Standard Reference Repository for distributions of the scientific community as reference compounds.

103. CHEMICAL SERVICES SUPPORT FOR CARCINOGENESIS TESTING

Keith, L. H., Radian Corp., *8500 Shoal Creek Blvd., P.O. Box 9948, Austin, Texas*, 78766, United States of America

OBJECTIVE: Establish a chemical repository for the safe storage, repackaging, and distribution of bioassay chemicals.

104. STRUCTURE-ACTIVITY OF CANCER RELATED ENDPOINTS

Kaufman, J. J., Johns Hopkins University, School of Medicine, Dept. of Anesthesiology, *725 N. Wolfe St., Baltimore, Maryland*, 21205, United States of America

OBJECTIVES: Correlate physico-chemical characteristics of compounds with with their known potential cancer related endpoints using sophisticated quantum mechanical methods and physico-chemical parameters as well as metabolic considerations. Develop both static and dynamic indices for determining the carcinogenicity of direct acting carcinogens as well as proximal carcinogenesis. Determine the suitable physico-chemical parameters and mathematical techniques to correlate potentially cancer related endpoint data generated by NCI studies and in the open scientific literature. Accordingly, obtain physico-chemical parameters that are not in the literature. From these correlations, gain insight into the mechanisms of carcinogensis and increase the predictive capability of anticipating the effects of untested compounds in biological systems.

105. STRUCTURE-ACTIVITY OF CANCER RELATED ENDPOINTS

Hopfinger, A. J., Case Western Reserve University, Case Inst. of Technology, Dept. of Macromolecular Science, *2040 Adelbert Rd., Cleveland, Ohio*, 44106, United States of America

OBJECTIVES: Correlate structurally similar compounds with their known potentially cancer related endpoints using physico-chemical parameters such as partition coefficients, steric

constants, or electronic constants. Correlate structurally diverse compounds with their known potentially cancer related endpoints using parameters such as substructure, interatomic distances, or molecular orbital calculations. In each area, determine the suitable physico-chemical parameters and mathematical techniques to correlate potentially cancer related endpoint data generated by NCI studies and in the open scientific literature. Accordingly, obtain physico-chemical parameters that are not available in the literature. From these correlations, gain insight into the mechanisms of carcinogenesis and increase the predicitive capability of anticipating the effects of untested compounds in biological systems.

106. MODE OF ACTION OF CHEMICAL CARCINOGENS - CHEMICAL INVESTIGATIONS

Benjamin, T., Weisburger, E. K., Atkins, R. C., U.S. Dept. of Health & Human Services, Public Health Service, National Inst. of Health, National Cancer Inst., Analytical Chemistry Section, *9000 Rockville Pike, Bethesda, Maryland,* 20205, United States of America

This project serves as a supporting function to the studies on metabolism of various toxic or carcinogenic agents in this Branch. The purity of compounds being investigated for toxicity or carcinogenicity is determined along with pertinent physical characteristics, useful in the design of the experiments. Possible metabolites of various aromatic amines, such as 2,4-toluenediamine, 2,4-diaminoanisole, and 2-aminoanthraquinone are synthesized as reference materials for metabolism studies. Methods of separation of aromatic amines and their metabolites are investigated.

BIBLIOGRAPHIC REFERENCES: Weisburger, E.K., Grantham, P.H. and Benjamin, T.: Separation and analysis of various carcinogenic aromatic amines and their metabolites. In Nieburgs, H.F. (Ed.): Prevention and Detection of Cancer, Vol. 2, Part 1. New York, Marcel Dekker, Inc., 1978, pp. 1961-1972.

C. REFERENCE RESOURCES

1. STATISTICAL RESOURCES

107. SOUTHEASTERN GROUP STATISTICAL SERVICES

Bartolucci, A. A., Birch, R. M., University of Alabama in Birmingham, School of Medicine, Dept. of Biostatistics, *1919 7th Ave. S., Birmingham, Alabama,* 35233, United States of America

The Statistical Center (SC) of the Southeastern Cancer Study Group (SECSG) will provide the statistical analysis and design of SECSG protocol studies. Before a study is activated, the SC will a) specify the number of evaluable cases necessary to achieve statistical significance, and b) estimate the length of time necessary to complete the study. When a patient enters on study, the SC assigns him to a particular treatment group based on randomization or stratification criteria in the protocol. When necessary the SC will implement minimization techniques for patient assignment.

The SC will collect relevant initial data for all patients entered on SECSG studies. When a patient completes a study, the SC evaluates his course of treatment and decides, in consultation with Project Chairmen, the evaluability and response to treatment of each patient in accordance with SECSG criteria. All data relevant to a case are to be stored and may be retrieved for analysis. All interim and final analyses of protocols are presented at Group meetings. Such analyses will include rate and duration of response or DFI, survival or response. At such presentations, the SECSG Statisticians discuss the feasibility of continuing or closing a particular study; also, progress reports are prepared for each active protocol. When a study is complete, the statistician assigned to the protocol shall assist the Project Chairmen in preparing a report of the results of the study for publication.

The SC will monitor all protocols for unanticipated toxicity or response and, when necessary, report its findings to the Project Chairmen. Every month, the SC compiles a member-institution report listing the number of cases entered, completed and evaluable, and notifies the SECSG Executive Committee of these findings when the committee meets.

108. CONSULTATION ON CLINICAL TRIALS

Byar, D. P., Gail, M. H., Green, S. B., Muenz, L. R., Corle, D. K., Levin, D. L., Rubinstein, L. V., U.S. Dept. of Health & Human Services, Public Health Service, National Inst. of Health, National Cancer Inst., Clinical & Diagnostic Trials Section, *9000 Rockville Pike, Bethesda, Maryland,* 20205, United States of America

The purpose of this project is to provide consultative services in statistical and epidemiological methodology in the design, interpretation, and evaluation of clinical trials and other studies requiring this kind of expertise. For some trials the section provides full statistical support including development of detailed study plans, randomization of patients, collection, processing, editing, and analysis of data, and preparation of scientific papers. At present, members of the Section are involved in studies concerned with prostate cancer, testis cancer, breast cancer, lung cancer, brain tumors, and mycosis fungoides. In addition to these major projects, a variety of other consultative activities, including review of scientific articles, arise in response to special requests.

BIBLIOGRAPHIC REFERENCES: Byar, D.P.: Review of the Veterans Administration Studies of Cancer of the Prostate and New Results Concerning Treatment of Stage I and II tumors. In Pavone-Macaluso, M., Smith P.H., and Edsmyr, F. (Eds.): Bladder Tumors and Other Topics in Urological Oncology. New York, Plenum Press, 1980, pp. 471-492. Byar, D.P.: VACURG studies of post-prostatectomy survival. Scand. J. Urol. and Nephrology, May, 1980.

109. EVALUATION AND MANAGEMENT OF BLADDER CANCER

Schmidt, J. D., University of California, San Diego Campus, School of Medicine, Dept. of Surgery, *P.O. Box 109, La Jolla, California,* 92093, United States of America

The objective of this collaborative clinical research effort is to improve the care of patients with bladder carcinoma through studies of different aspects of clinical management. The studies are carried out in several institutions simultaneously according to well-designed protocols. A central laboratory is responsible for the uniform collection, classification and analysis of pathologic and cytologic material and all data are being collected, organized and analyzed in a central statistical office. In each participating institution, the following protocols are being studied: Assessment and characterization of patients, their neoplasms and the fields from which the neoplasms arise; studies of systemic chemotherapy in patients with metastatic bladder carcinoma; studies of chemical intervention (prevention of recurrence) in patients with completely resected low-stage bladder lesions; and studies of systemic chemotherapy as adjuvant to definitive therapy of invasive bladder carcinoma.

110. EVALUATION-MANAGEMENT OF BLADDER CANCER PATIENTS

Cutler, S. J., Georgetown University, School of Medicine, Dept. of Community & Family Medicine, *3800 Reservoir Rd. N.W., Washington, District of Columbia,* 20007, United States of America

The objective of this collaborative clinical research effort is to improve the care of patients with bladder carcinoma through studies of different aspects of clinical management. The studies are carried out in several institutions simultaneously according to well-designed protocols. A central laboratory is responsible for the uniform collection, classification and analysis of pathologic and cytologic material and all data are being collected, organized and analyzed in a central statistical office. In each participating institution, the following protocols are being studied: Assessment and characterization of patients, their neoplasms and the fields from which the neoplasms arise; studies of systemic chemotherapy in patients with metastatic bladder carcinoma; studies of chemical intervention (prevention of recurrence) in patients with completely resected low-stage bladder lesions; and studies of systemic chemotherapy as adjuvant to definitive therapy of invasive bladder carcinoma.

111. STATISTICAL SUPPORT FOR NCI SERUM PANEL

Richman, L., Ebon Research Systems, *820 Quincy St. N.W., Washington, District of Columbia,* 20011, United States of America

A research facility may request and obtain blind panels of sera from NCI, from patients known to have or not to have cancer. These panels are subjected to one or more tests at the facility and rated as benign or malignant in each test. A statisti-

cal analysis is then performed to determine whether a given test, or any combination of tests, has predictive value in general or for a given subgroup of cases. It is the intention of Ebon to provide programming and statistical/analytical assistance to the NCI in order to facilitate the evaluation of the various diagnostic procedures used.

112. CANCER CENTER SUPPORT GRANT

Good, R. A., Sloan Kettering Inst. for Cancer Research, *410 E. 68th St., New York, New York,* 10021, United States of America

This application is for renewal of the core grant which has provided essential support for the research program of the Sloan-Kettering Institute for Cancer Research. This is a program of cancer research, many aspects of which are closely linked with the treatment activities of our sister organization, Memorial Hospital. The core grant has provided partial support of salaries of approximately 11% of the professional staff, including most of the Institute's scientific leadership, and has underwritten supporting resources such as animal maintenance services, biostatistical management, instrumentation, and other centralized activities required by a large productive scientific organization. An important provision has been the financial support necessary to develop new programs. The core support has been crucial in helping to assure stability and give a degree of flexibility not available to the Institute from University or State funds.

113. CONFERENCE ON BIOSTATISTICS IN CLINICAL ONCOLOGY

Mike, V., Colton, T., Stanley, K. E., Sloan Kettering Inst. for Cancer Research, *410 E. 68th St., New York, New York,* 10021, United States of America

The objective of this grant proposal is to obtain funding for a one-week conference on biostatistics in clinical oncology, to be held in June 1981 at Memorial Sloan Kettering Cancer Center in New York City. Plans for this conference are a direct result of recommendations made by the Workshop on Epidemiology and Biostatistics in Clinical Cancer Education sponsored by the National Cancer Institute in March 1979. Since there are not enough professionals trained in biostatistics to meet the needs of medical schools and cancer centers around the country, special conferences would be most desirable to enhance the effectiveness of individuals now filling many of these positions. The Chairman of the Biometrics Section of the American Statistical Association asked the Principal Investigator t › serve as Chairman of a new committee created to organi: such a conference; the Co-investigators were appointed committee members.

The proposed conference is designed for statisticians and others with a general background in statistics who are currently involved in some aspect of clinical cancer research, but are not part of an established biostatistics group and have not had specific training in this area. Lectures and panel discussions will cover a broad spectrum of topics, from questions of study design and modern statistical methodology to issues of medical ethics and various aspects of teaching and statistical consulting in the medical community.

114. CORE BIOSTATISTICS AND INFORMATION PROCESSING

Moon, T. E., University of Arizona, School of Medicine, Dept. of Internal Medicine, *1501 N. Campbell Ave., Tucson, Arizona,* 85721, United States of America

This is part of a broader project. A summary of this subproject is not available.

2. INFORMATION SYSTEMS AND INFORMATION DISSEMINATION

115. INTERNATIONAL SCIENTIST INFORMATION EXCHANGE PROGRAM

Grassi, G. E., Union Internationale Contre le Cancer, *3 Rue du Conseil General, c/o Dr. J.F.D. Delafresnaye, 1205 Geneva, Switzerland*

The purpose of this renewal is to continue the International Cancer Research Technology Transfer (ICRETT) and the International Cancer Research Workshop (ICREW).

116. CANCER INFORMATION SERVICES FOR DEVELOPING COUNTRIES

Holmes, P. L., British Lending Library, *Store St., London WC1E 7DG, England, United Kingdom*

OBJECTIVE: Collect, analyze, and disseminate all data useful in the prevention, diagnosis, and treatment of cancer, including the establishment and maintenance of an international cancer research data bank to collect, catalog, store, and disseminate, insofar as feasible, the results of cancer research undertaken in any country for the use of any person involved in cancer research in any country.

117. INFORMATION SYSTEM - DATA - MATHEMATICAL MODELLING AND MONITORING

Bell, R., Lister, T. A., Malpas, J. S., Wrigley, P. F., Gregory, W., Jackson, R., MacDonald, A., Johnson, S. A., Imperial Cancer Research Fund, Medical Oncology Unit, *Lincoln's Inn Fields, London WC2A 3PX, England, United Kingdom*

Information system - the information system, initially developed by an outside contractor in 1974, has been extensively developed and altered over the past 18 months. The development of a flexible series of programs capable of application to diverse clinical situations has been achieved. Separate programs for data input, data listing and manipulation, and data analysis have been evolved. Data are presented in tabular and graphical forms and statistical evaluations of analyses are available.

Data sheets can be designed and added to the system for new diseases, or new trials by clinical personnel with no computer experience. Data input can be performed and checked by clinical or secretarial staff. Analysis requires some training but no knowledge of programming or computer systems. The system has been used to analyze recent and current clinical trials in AML, ALL, NHL and Hodgkin's disease, and is also in use in the CRC Medical Oncology Unit, Southampton.

Data - a) AML clinical data on all cases of acute myelogenous leukemia seen in this Unit since 1969 (590 cases) have been entered and the data verified. This is one of the largest data bases availble for this disease. Analysis of these data is in progress and will form the basis of a review of the disease. b) Other diseases - the clinical data for adult lymphoblastic leukemia and non-Hodgkin's lymphoma are being entered. Subsets of the data concerning specific trials are now complete. All data should be entered by June, 1980. A new data sheet, designed to give information pertinent to current areas of interest, has been developed and a major effort to obtain and enter the data is planned for 1980. c) Mathematical modelling and monitoring - using operational research techniques, mathematical models of patients' behavior have been developed for acute myelogenous leukemia and Hodgkin's disease. The model provides an alternate form of analysis of trial data and is applicable to small numbers and to trials in progress. It is planned to add the modelling to the information system to provide a monitoring function for current trials.

118. INFORMATION SYSTEM FOR CARCINOGENESIS EXTRAMURAL PROGRAM

Hildreth, R. F., JRB Associates Inc., *8400 Westpark Dr., McLean, Virginia,* 22101, United States of America

This job will capitalize on two major plus features in the current situation - the fact that the graphsheets have recently been updated to a condition of complete currency and accuracy, and the fact that information on the Biological Carcinogenesis projects have been kept up and reports have been run regularly. The first means that there is a current and accurate source of information for many of the data elements needed by the DIS already at hand. The second means that most of the DIS software is currently on line, that it has not been migrated, and that less effort will be needed to restore full operational capability for the system.

119. ANTINEOPLASTIC DRUG DISPLAYS FOR THE COMPUTERIZED PROBLEM-ORIENTED MEDICAL INFORMATION SYSTEM

Grove, W. R., Gundel, J., Esterhay, R., Fortner, C. L., Wiernik, P. H., U.S. Dept. of Health & Human Services, Public Health Service, National Inst. of Health, National Cancer Inst., Clinical Research Pharmacy Section, *Baltimore, Maryland,* 21201, United States of America

The objective of this project is to prepare referenced summarized pharmacologic information which is readily retrievable at the touch-sensitive cathode ray screen terminal located at the BCRP nursing station.

Current literature is reviewed to obtain accurate and complete drug information on antineoplastic agents. The standardized format consists of separate display pages for information as follows: DRUG NAME, CHECK PROBLEM LIST FOR, SIDE EFFECTS TO WATCH FOR, DRUG INTERACTIONS, TEST INTERFERENCES, USUAL DOSAGE, PHARMACEUTICAL DATA, MECHANISM OF ACTION, AND METABOLISM AND EXCRETION. Reference codes are included with all pages of information, which may be further explored by contacting either the Clinical Research Pharmacy Section of the BCRP or the PROMIS Laboratory, University of Vermont. After completion, display sequences are sent to the PROMIS laboratory to be audited for accuracy, completeness, and correctness of clinical judgment before being entered into the computerized system.

The completed antineoplastic drug displays provide ready access to referenced summaries of the current medical literature. They form an integral part of the contribution to improved patient care and improved medical records provided by the PROMIS system.

120. EXTENSION OF THE COMPUTERIZED PROBLEM-ORIENTED MEDICAL INFORMATION SYSTEM (PROMIS) INTO THE CANCER TREATMENT AREA

Esterhay, R. J., Gustafson, J. N., Fortner, C. L., Aisner, J., Schiffer, C. A., Schimpff, S. C., Young, V. M., Wiernik, P. H., Foy, J. L., U.S. Dept. of Health & Human Services, Public Health Service, National Inst. of Health, National Cancer Inst., Clinical Oncology Branch, *Baltimore, Maryland,* 21201, United States of America

The Baltimore Cancer Research Program (BCRP) has developed cancer guidance displays (treatment protocols) on the computerized Problem Oriented Medical Information System (PROMIS) in Burlington, Vermont, at the University of Vermont School of Medicine, with the aid of a communication linkage between BCRP and PROMIS. The computerized displays for the logic and action of treating cancer problems are defined by the creation and sequencing of the computer display pages or frames. These displays provide an automatic connective device between the four phases of medical action of the Problem Oriented Medical Record. The problem-defining sequence determines the specific plan and it is that plan which is in part a protocol or series of protocols for treating a specific cancer problem. It is through the use of these explicit information and directional displays that the health care provider can couple learning with doing while gathering information and treating patients' cancer problems. The entire systems package has been shipped to BCRP and testing and debugging has begun in conjunction with the Interagency Agreement with the National Center for Health Services Research (Y01 CM 80109). This project ends on May 31, 1981.

121. CANCER HOPELINE - INFORMATION/SUPPORT SYSTEM

Andrews, C. J., Ephraim McDowell Cancer Research Foundation Corp., *915 S. Limestone St., Lexington, Kentucky,* 40503, United States of America

The objective of this program is to further develop and provide a cancer information and referral service for the citizens of the Commonwealth of Kentucky, since this population is not covered presently under existing cancer information services of other comprehensive cancer centers in this region of the country. This is in part already operational as the McDowell's Cancer Hopeline, a toll-free telephone information service for all Kentuckians. The specific objectives of the current project are: (1) Expand the development of Hopeline cancer communication service as part of the McDowell Network's 'grassroots' program into western Kentucky; (2) provide direct patient assistance via the Hopeline professional staff and advisory board; (3) provide cooperative consultative services to health professionals in the management of needs of cancer patients and their families; (4) develop public educational materials and/or programs designed to provide accurate information on cancer etiology, detection, diagnosis, management and rehabilitation as well as the creation of programs to sensitize instruction of health care professionals to the psychosocial, economic, ethical, and legal ramifications of cancer; (5) to continue the development and eventual publication of a state-wide area resource referral booklet to furnish health professionals and physicians with documentation on cancer care services.

122. CANCER INFORMATION EXCHANGE

Meadows, A. T., D'Angio, G. J., Kramer, S., Jarrett, P., University of Pennsylvania, Children's Hospital of Philadelphia, Dept. of Medicine, *34th St. & Civic Ctr. Blvd., Philadelphia, Pennsylvania,* 19104, United States of America

Rapid progress is being made in cancer management with consequent better survival rates, and an increased understanding of the adversities of successful treatment. Many of these advances have been made within cancer centers, and the swift transfer of new information therefrom to physicians in the community is highly desirable. Centers in turn rely on the early referral and on follow-up information provided by community physicians in order to continue these advances. This proposal is concerned with the development of programs for the early and full exchange of information between Centers and non-Center-related health professionals so that the latest and best diagnostic therapeutic and follow-up measures can be shared by patients in Centers and in the Community. Children with cancer simplify such program development because the types of cancer are few, and recent treatment successes have been notable and can be attributed to specific therapeutic measures that can be identified. This Center has the Greater Delaware Valley (GDV) Pediatric Tumor Registry as a resource for such a project. The registry is population-based and collects information regarding all children seen at 140 institutions within the GDV.

The proposal is divided between two stages: 1) Planning (one year) and 2) Program Development (three years). Measures found to be effective for pediatric oncology can be applied to adults as well.

123. STUDY OF CANCER INFORMATION NEEDS IN ILLINOIS

Warnecke, R. B., Haenzsel, W., Manfredi, C., Illinois Cancer Council, *36 S. Wabash Ave., Suite 700, Chicago, Illinois,* 60603, United States of America

The general goal of this project is to determine and evaluate the most effective means of communicating information about prevention and early detection of cancer of specific sites (breast, cervix-uterus, colon-rectum, skin and lung) to hard-to-reach rural and urban population groups in Illinois, and to identify other factors that might inhibit behavior once proper information and motivation are present.

The ongoing research is a panel study, in which the existing knowledge, belief, behavior and access to preventive programs were determined by means of a baseline survey; a special communication was then designed, tailored to the specific needs of the panel members, and its short-term effectiveness is currently being evaluated. The specific aims of the proposed renewal are to: a) Determine the long-term effects of the communication, by doing a second follow-up survey approximately one year after the first follow-up; b) provide an available pool of respondents on which to test experimental communications developed by the Office of Cancer Communications and the Division of Cancer Control; and c) investigate the effects of the attitudes and practices of the health care providers on the health behavior of the respondents, by means of a survey of the physicians indicated by the panel members as their source of care.

124. INFORMATION SYSTEM FOR RETRIEVAL OF GYNECOLOGIC DATA ON MALIGNANCY

Buchler, D. A., University of Wisconsin, Madison Campus, Center for the Health Sciences, *500 Lincoln Dr., Madison, Wisconsin,* 53706, United States of America

This is part of a broader project. A summary of this subproject is not available.

125. CLINICAL ONCOLOGY UNITS - INFORMATION SYSTEM

Hutchinson, W. B., Fred Hutchinson Cancer Research Center, *1124 Columbia St., Seattle, Washington,* 98104, United States of America

This is part of a broader project. A summary of this subproject is not available.

126. CLEARINGHOUSE FOR ONGOING WORK IN CANCER EPIDEMIOLOGY

Muir, C. S., Centre International de Recherche sur le Cancer, *150 Cours Albert Thomas, 69372 Lyon Cedex 2, France*

OBJECTIVE: Establishment of a clearinghouse for ongoing work in cancer epidemiology.

127. NATIONAL CANCER PROGRAM INFORMATION CLEARINGHOUSE

Hart, C., Kappa Systems Inc., *1501 Wilson Blvd., Arlington, Virginia*, 22209, United States of America

This project will encompass various implementation services and technical support for the NCI's public information, public education, patient education and certain limited areas (dissemination and information referral) of professional information. Performance of the work shall involve acquiring cataloging, operating storage/retrieval systems and assisting in the development of public information, educational products and services: a complex of informational analyses and technical support.

128. CANCER INFORMATION CLEARINGHOUSE AND ALLIED SERVICES

Pyke, H., Control Systems Research Inc., *1515 Wilson Blvd., Arlington, Virginia*, 22209, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

129. RESOURCE FOR INFORMATION NEEDS OF DCCP, NCI AND IARC

McCaleb, K. E., SRI International, *333 Ravenswood Ave., Menlo Park, California*, 94025, United States of America

OBJECTIVE: Provide support to both the Carcinogenesis Program and to the NC Program by providing information on those chemicals with which man comes in contact. This serves to make available to program staff, as well as other interested parties, data and information on the structure, properties, use, production, distribution, and human exposure of such substances. In accomplishing this objective, it is expected that the contractor will acquire information which will assist program staff in: choosing those compounds having highest priority for entry into bioassay testing; identifying trends in the exposure of man to chemicals in his environment; exposures; and providing information support to the related activities of other organizations, both nationally and internationally.

130. TO ESTABLISH AN OFFICE TO COORDINATE INFORMATION AND TECHNOLOGICAL TRANSFER IN ENVIRONMENTAL MUTAGENESIS AND CARCINOGENESIS

Hollaender, A., U.S. Dept. of Energy, *17th & Pennsylvania Ave. N.W., Washington, District of Columbia*, 20006, United States of America

OBJECTIVE: The National Cancer Institute in collaboration with EPA, NIEHS and DOE,will support training centers for instruction of national and international scientists through leadership of Dr. Hollaender on procedures and information and data bases in the area of mutagenesis and carcinogenesis.

MAJOR FINDINGS: Several workshops have been held to provide such orientation at several academic institutions in this country and abroad. In providing sorely needed skills for the laboratory worker the project has achieved a cadre of trained experts who can interpret genetic/toxicology tests, which is important in assessment of health aspects and impact of mutagens and carcinogens.

SIGNIFICANCE TO BIOMEDICAL RESEARCH AND PROGRAM OF THE INSTITUTE: Training is an integral part of providing properly qualified scientific investigators who have the required skills as laboratory workers. Additionally, it provides a cadre of future program managers and science administrators who are capable of making biomedical evaluations and decisions requisite in research programs of the scientific community at large as well as NCI.

PROPOSED COURSE: This training effort is expected to extend, on a collaborative basis with other agencies, from 1979 through 1981 at which time an evaluation will be made of the success of this program.

131. ORAL/HEAD AND NECK CLINICAL CANCER EDUCATION PROGRAM

Watkins, F. S., Young, S. K., University of Oklahoma, Health Sciences Center, School of Dentistry, Dept. of Continuing Dental Education, *Box 26901, Oklahoma City, Oklahoma*, 73190, United States of America

This project will design and implement additions for a multidisciplinary education program which addresses three major components of dental care in oral/head and neck cancer. The program consists of educational activities for dental health professionals and consumers which will provide sources of training, coordination and an information exchange for Oklahoma dental students, dental hygiene students and dental practitioners. The consumer education program will provide information on oral cancer and instruction on self-examination to persons identified as regular dental patients and to the public sector who may or may not seek regular dental care.

The professional educational program will be developed through symposia, workshops, development of audiovisual materials, and development of a patient referral information system. Further educational experiences will be provided through a dental oncology unit which will provide opportunties for dental management of the oral/head and neck cancer patient.

A formative evaluation will be planned to address the need to determine what Oklahoma dentists know and don't know about oral/head and neck cancer, the problems of patient adherence to the self-examination technique, the effects of instruction on the number of oral/head and neck cancer patient referrals and the mechanism of the educational system being developed.

132. CANCER EDUCATION GRANT

Brascho, D. J., University of Alabama in Birmingham, School of Medicine, Dept. of Radiation Oncology, *1919 7th Ave. S., Birmingham, Alabama*, 35233, United States of America

The clinical cancer education program at the University of Alabama in Birmingham is a multidisciplinary educational program for medical students, house staff, postgraduate physicians and paramedical personnel. Key faculty members of the medical school and members of the Comprehensive Cancer Center are involved in a well-organized educational program which stresses the interdisciplinary approach to cancer treatment. Broad evaluation of the programs has been under way, and efforts are now being made to expand the exposure to medical students in their clinical years and in their sophomore year of medical school. The program supports clinical associates and clinical assistants in the subspecialty of oncology. A well-equipped library with audiovisual materials, as well as publications and medical textbooks, is available for the faculty and trainees. A strong program for postgraduate continuing education has been developed through the MIST (Medical Information Service via Telephone) Program, and 'Practical Reviews in Cancer Management', an audio-cassette learning program.

133. DETROIT SSMA POPULATION-BASED CANCER REGISTRY

Brennan, M. J., Michigan Cancer Foundation, *110 E. Warren Ave., Detroit, Michigan*, 48201, United States of America

OBJECTIVES: Maintain a cancer information system in the three counties of the Detroit metropolitan area. Collect data in sufficient detail so that each cancer can be classified and coded. Collect complete information regarding extent of disease, diagnostic procedures, and first cause of cancer directed therapy on all patients diagnosed since 1973. Utilizing all available methodologies, obtain active follow-up of all cases diagnosed since 1973. In conjunction with participation in the SEER Program, cooperate with NCI field staff in its quality control activities. Maintain a core staff including both professional and technical people. Submit annual progress reports in August of each year. Conduct, in consultation with the Computer Science Section of NCI, a detailed analysis of the current data processing system and develop a detailed plan to upgrade the existing system.

134. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Cullen, J. W., University of California, Los Angeles Campus, School of Medicine, *2025 Zonal Ave., Los Angeles, California*, 90024, United States of America

The Comprehensive Cancer Center should serve as the focal point for community efforts to assure the widespread use of the best available methods for early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

135. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Hammond, D., University of Southern California, School of Medicine, Dept. of Pediatrics, *2025 Zonal Ave., Los Angelez, California*, 90033, United States of America

The Comprehensive Cancer Center should serve as the focal point for community efforts to assure the widespread use of the best available methods for early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

136. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Semple, M., Colorado Regional Cancer Center Inc., *1655 Lafayette St., Suite 301, Denver, Colorado*, 80218, United States of America

The Comprehensive Cancer Center should serve as the focal point for community efforts to assure the widespread use of the best available methods for early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

137. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Cole, J. W., Yale University, School of Medicine, Dept. of Surgery, *333 Cedar St., New Haven, Connecticut*, 06510, United States of America

The Comprehensive Cancer Center should serve as the focal point for community efforts to assure the widespread use of the best available methods for early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

138. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

White, J. E., Howard University, School of Medicine, Dept. of Oncology, *2400 6th St. N.W., Washington, District of Columbia*, 20001, United States of America

The Comprehensive Cancer Center should serve as the focal point for community efforts to assure the widespread use of the best available methods for early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

139. A COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Mansell, P. W., University of Miami, School of Medicine, Dept. of Oncology, *1400 N.W. 10th Ave., Box 520875, Coral Gables, Florida*, 33152, United States of America

The Comprehensive Cancer Center should serve as a focal point for community efforts to assure the widespread use of the best available methods for early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

140. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Steiner, J., Illinois Cancer Council, *36 S. Wabash Ave., Suite 700, Chicago, Illinois*, 60603, United States of America

The Comprehensive Cancer Center should serve as the focal point for community efforts to assure the widespread use of the best available methods of early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

141. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Waalkes, T. P., Johns Hopkins University, School of Medicine, Dept. of Oncology, *725 N. Wolfe St., Baltimore, Maryland*, 21205, United States of America

The Comprehensive Cancer Center should serve as the focal point for community efforts to assure the widespread use of the best available methods for early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

142. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Patterson, W. B., Sidney Farber Cancer Center Inc., *44 Binney St., Boston, Massachusetts*, 02115, United States of America

The Comprehensive Cancer Center should serve as the focal point for community efforts to assure the widespread use of the best available methods for early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

143. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NEWTORK

Carr, D. T., Mayo Foundation, *200 1st St. S.W., Rochester, Minnesota*, 55901, United States of America

The Comprehensive Cancer Center should serve as the focal point for community efforts to assure the widespread use of the best available methods for early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

144. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Murphy, G. P., State Dept. of Health, *666 Elm St., Buffalo, New York*, 14203, United States of America

The Comprehensive Cancer Center Communications Network will serve as a focal point for community outreach efforts to assure the widespread dissemination of information through the establishment of WATS lines and tape recorded cancer lectures, as well as through the mailing of brochures and newsletters.

145. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Donaldson, M. H., Inst. for Cancer Research, *7701 Burholme Ave., Philadelphia, Pennsylvania*, 19111, United States of America

The Comprehensive Cancer Center should serve as a focal point for community efforts to assure the widespread use of the best available methods of early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information, both at the lay and professional levels.

146. COMPREHENSIVE CANCER CENTER COMMUNICATIONS NETWORK

Hutchinson, W. B., Fred Hutchinson Cancer Research Center, *1124 Columbia St., Seattle, Washington*, 98104, United States of America

OBJECTIVE: To serve as a focal point within the center for information about cancer for the public and health professionals.

PROPOSED COURSE: The contractor will establish an information/education office and, by the end of the first year, install WATS lines for hotline services for the public. Contractor will conduct the program, including promotion, for a total of 3 years.

PROGRESS: This center's communications office, now fully staffed, has preliminary planning well under way toward the offering of a telephone service on a statewide basis in Washington.

147. COMPREHENSIVE CANCER CENTERS COMMUNICATIONS NETWORK

Graham, J., University of Texas, University of Texas System Cancer Center, M.D. Anderson Hospital & Tumor Inst., Cancer Control Programs, *6723 Bertner Ave., c/o Texas Medical Ctr., Houston, Texas*, 77030, United States of America

The Comprehensive Cancer Center should serve as a focal point for community efforts to assure the widespread use of the best available methods for early detection and diagnosis of cancer, collection of data useful in the prevention and treatment of cancer, and dissemination of information both at the lay and professional levels.

148. LATIN AMERICAN CANCER RESEARCH INFORMATION PROJECT

Litvak, J., Pan American Health Org., *525 23rd St. N.W., Washington, District of Columbia,* 20037, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

149. INFORMATION UNIT

Butterworth, C. E., University of Alabama in Birmingham, School of Community & Allied Health, Dept. of Nutrition Sciences, *Tidwell Hall BOO6, University Station, Birmingham, Alabama,* 35294, United States of America

This is part of a broader project. A summary of this subproject is not available.

150. PREPARATION OF SAFETY AND TOXICITY INFORMATION PACKAGES

Hildreth, R. F., JRB Associates Inc., *8400 Westpark Dr., McLean, Virginia,* 22101, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

151. PREPARATION OF SAFETY AND TOXICITY INFORMATION PACKAGES

Rose, C. S., Tracor Jitco Inc., *1776 E. Jefferson St., Rockville, Maryland,* 20852, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

152. PREPARATION OF SAFETY AND TOXICITY INFORMATION PACKAGES

Campbell, G., Franklin Inst. of the State of Pennsylvania, *20th & Benjamin Franklin Pkwy., Philadelphia, Pennsylvania,* 19103, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

3. LIBRARIES AND PUBLICATIONS

153. QUALITY CONTROL IN CANCER REGISTRIES

Dodds, A. M., Anti-Cancer Council of Victoria, *90 Jolimont St., East Melbourne, Victoria 3002, Australia*

OBJECTIVE: To test quality of input data to the Central Cancer Registry.

APPROACH: 1. Parallel abstracting, using two medical abstractors, was carried out on the first 200 cases of cancer registered in 1977 (excluding skin - Rubric 173 of ICD8.) The degree of concordance between abstractors on each of the items of data was measured. 2. A further study on the 200 cases was made to establish ease or difficulty with which each item of data could be extracted from hospital case histories.

PROGRESS: Results are being tabulated and should be available for publication in the first half of 1979.

154. PROGRAM OF THE INTERNATIONAL UNION AGAINST CANCER

Delafresnaye, J. F., Metcalf, D., van der Werf Messing, B., Junqueira, A. C., Flamant, R., Union Internationale Contre le Cancer, *3 Rue du Conseil General, c/o Dr. J.F.D. Delafresnaye, 1205 Geneva, Switzerland*

The activities described in this grant application correspond to two Programmes of the UICC:

The Experimental Oncology Programme comprises Review Study Groups on the Biology of Human Cancer, to study in sequence each form of human cancer and to report thereon in widely distributed publications, and Training Courses in Cancer Research, to provide an overview of research to young graduates about to embark on a research career.

The Clinical Oncology Programme comprises the TNM Classification of Malignant Tumors, Multidisciplinary Project on Breast Cancer, and Controlled Therapeutic Trials.

155. THE EVALUATION OF CARCINOGENIC RISK OF CHEMICALS TO MAN

Agthe, C., World Health Org., *150 Cours Albert Thomas, Lyon, France*

OBJECTIVES: Prepare individual compound data sheets, containing the essential data needed for the evaluation of carcinogenicity tests, in a condensed and uniform format. Distribute data sheets to the expert designated to prepare monographs on the specific chemicals in question. Provide final draft of monograph to a group of experts for evaluation and revision. Provide the final version of the monograph to all members of the committee who are invited to participate in discussion and revision at an annual meeting. Publish monographs and distribute to international organizations and Government Agencies. Establish a registry of chemicals which are undergoing long-term bioassay at non-commercial institutions throughout the world. The data base should contain the names of specific chemicals under test, the species of animal being used, the sex and number of animals in each experimental group, the dose of material administered, the vehicle used, and the route of administration.

156. NO. CALIFORNIA CANCER CONTROL

Carter, S. K., Priest, P. E., Gottfried, D. F., Margo, G., Di Sogra, C., Sibary, K., Northern California Cancer Program Inc., *770 Welch Rd., Suite 190, Palo Alto, California,* 94304, United States of America

During the second year of this grant, bi-weekly cancer control staff meetings and quarterly Integrated Service Area Council meetings were held. The Cancer Control Steering Committee continued to provide overall guidance. Two new committees were developed, an Evaluation Committee (for program design, methodology review) and a Prevention Committee. Three proposals were developed and submitted to various funding agencies NCCP, in addition to the individual community proposals developed and submitted by the ISAs. The NCOG-Outreach grant award, developed by the Cancer Control and Clinical Science Program staff was awarded and implementation immediately began in ISAs participating in the original grant. Other ISA participation is encouraged if local community resources are adequate.

Seven ISAs continued their community activities, one new ISA was developed, and two other communities are considering a central council and/or ISA designation.

Control and ISA intervention activities focused on vocational rehabilitation, reimbursement, rehabilitation guidelines for clinical protocols, an oncology care unit workshop, development of a cancer data systems manual, development of a community health manual using DES as a model, the completion of the DES demonstration project, numerous training sessions for health professionals, a smoking cessation program, development of audio-visual materials for DES screening and examination, cancer service directories for health professionals and patients, patient education materials availability and distribution, and continuation of needs and resource assessment.

157. INDEXING AND KEYBOARDING OF CANCER-RELATED MEETINGS AND DISSERTATION ABSTRACTS

Lunin, L., Herner & Co., *1700 N. Moore St., Arlington, Virginia,* 22209, United States of America

This project is for the acquisition, indexing, and keyboarding of cancer-related meeting and dissertation abstracts. The contractor will process approximately 12,000 abstracts, with the end product a magnetic tape for input into the National Library of Medicine MEDLARS data base, and then input into MEDLINE, CANCERLINE.

158. SCREENING AND ABSTRACTING OF PUBLISHED CANCER-RELATED LITERATURE

Kleinstein, B., Franklin Inst. of the State of Pennsylvania, *20th & Benjamin Franklin Pkwy., Philadelphia, Pennsylvania,* 19103, United States of America

The Contractor screens over 1500 biomedical and other scientific journals in addition to books, reports, and monographs related to cancer. These selections are then abstracted, indexed, and keyboarded for input to the CANCERLINE, a data base subset located within MEDLINE at the National Library of Medicine. The documents are put on magnetic tapes which are

the property of the NCI. Other products and services of the ICRDB are by-products of this particular activity.

159. COMPUTERIZED LITERATURE SURVEILLANCE OF NATURAL PRODUCTS

Farnsworth, N. R., University of Illinois, Medical Center at Chicago, School of Pharmacy, Dept. of Pharmacognosy & Pharmacology, *1853 W. Polk St., Chicago, Illinois*, 60680, United States of America

OBJECTIVE: Perform computerized literature searches of pertinent journals and abstracting services in and related to the natural products area. The main searches to be performed and the types of data required are: chemical structures of new natural products; analogs of natural products of interest to the NCI; current reports of biological activity of natural products; biological sources of natural products and their analogs; and retrospective searches on active extracts or organisms of interest. Timing and information required in literature surveillance reports: chemical structures of new natural products; analogs of natural products of interest to the NCI; current reports of biological activity of natural products; biological sources of natural products and their analogs; and retrospective searches on active extracts, broths, or organisms.

160. PARTIAL SUBSIDY FOR THE JOURNAL OF CANCER RESEARCH

Philips, F. S., Magee, P. N., American Assn. for Cancer Research Inc., *1275 York Ave., New York, New York*, 10021, United States of America

This project is concerned with the worldwide distribution of the results of experimental and clinical cancer research conducted in this country and elsewhere by publication of the Journal of CANCER RESEARCH.

161. DISTRIBUTION OF BIOASSAY TECHNICAL PUBLICATIONS

Brown, M., Information Planning Assn. Inc., *656 Quince Orchard Rd., Box 1523, Gaithersburg, Maryland*, 20760, United States of America

No summary has been provided to the Smithsonian Science Information Exchange.

162. CLINICAL CANCER EDUCATION PROGRAM

Potter, J. F., Sinks, L. F., Schein, P. S., Delgado, G., Holt, R. W., Broering, N. C., Bagdoyan, H., Stesis, K. R., Dritschilo, A., Georgetown University, School of Medicine, Dept. of Surgical Oncology, *3800 Reservoir Rd. N.W., Washington, District of Columbia*, 20007, United States of America

This Grant supports, in part, cancer education at Georgetown University for medical students, residents, Clinical Assssociates, and postgraduate personnel at various levels. The Library component provides special assistance to the education of the above named personnel, with special emphasis on the field of cancer.

The emphasis is on the clinical aspects of cancer education, but there is some benefit derived from the basic science studies, especially by virtue of the special library program.

163. CANCER RESEARCH LIBRARY SERVICE

Marks, P. A., Columbia University, College of Physicians & Surgeons, Dept. of Medicine, *630 W. 168th St., New York, New York*, 10032, United States of America

This is part of a broader project. A summary of this subproject is not available.

164. RESEARCH LIBRARY

Bosley, J., Inst. for Cancer Research, *7701 Burholme Ave., Philadelphia, Pennsylvania*, 19111, United States of America

This is part of a broader project. A summary of this subproject is not available.

165. CORE - FHCRC ARNOLD LIBRARY

Wilson, J. W., Fred Hutchinson Cancer Research Center, *1124 Columbia St., Seattle, Washington*, 98104, United States of America

This is part of a broader project. A summary of this subproject is not available.

166. LIBRARY MANAGEMENT AND INFORMATION

Hutchinson, A. P., Roswell Park Memorial Inst., *666 Elm St., Buffalo, New York*, 14263, United States of America

This is part of a broader project. A summary of this subproject is not available.

4. DATA BASES AND PROCESSING

167. COUNTRYWIDE AUTOMATED PATHOLOGICAL DATA BASE (PALGA)

Van der Esch, E. P., Delemarre, J. F., Seiverling, R., Landman, J., Nederlands Kankerinstituut, *106-108 Sarphatistraat, Amsterdam, Netherlands*

OBJECTIVE: This project aims at the establishment of a countrywide automated retrieval system for patient-linked pathological diagnosis.

APPROACH: Storage is made with a coded system according to SNOP (Systematized Nomenclature of Pathology) utilizing thesaurus techniques to cover synonyms. Retrieval is two fold: a) on the identity of the patient to enable a review of all examinations performed for a single patient (possibly at a variety of pathology laboratories) and to effectuate the follow-up procedures; b) on the diagnosis (code or synonym) to establish series for review, particularly the more rare entities; also to enable the teaching institutes to find suitable material.

The pilot studies with machine testing of the central data base and video terminal outlets have been completed. The adapted version of the design is being implemented at the 5 locations of the participants in the experiment which is to be closed December 1979.

The organization is part of a foundation in which major pathology departments of several Universities, regional institutes and the Netherlands Cancer Institute collaborate. The subsidy is provided under the auspices of the Dutch Government.

PROGRESS: Achievements include a 30,000-word thesaurus which can be consulted on-line to assist the formulation of the retrieval questions under b. A patient identification system with sufficient validity to cover a population of approximately 15 million has been tested. Operating with the general information available at the patient registration in the average hospital, the reliability proved to be acceptable.

A control body to supervise the management and use of the data bank content has come into existence. The privacy aspects involved are further investigated.

Besides the initial aim, it means that important by-products come into existence. A pathology based cancer registry for the Netherlands appears to be feasible. In addition, the PALGA design has been a model for the countrywide cervical cancer screening project.

168. PROCESSING AND ANALYSIS OF DATA FROM CONTROL CLINICAL TRIALS

Gallus, G., De Carli, A., Bossi, A., Cesana, B., Istituto di Biometria, *Via Venezian 1, 20133 Milan, Italy*

OBJECTIVES: a) Setting-up of an updated library of statistical programs related to the analysis of data from control clinical trials in oncology. b) Study of specific methods for the definition of 'prognostic features.'

APPROACH: The library will consist both of original programs written by the working unit and of programs obtained by other institutions and suitably implemented. The work on prognostic features will rely on a non-parametric multivariate approach.

PROGRESS: The statistical programs already available constitute a convenient starting basis for the analysis of long-term clinical trials.

169. JOINT NLM/NCI INTERNATIONAL CANCER RESEARCH DATA BANK

Kissman, H. M., U.S. Dept. of Health & Human Services, Public Health Service, National Inst. of Health, National Library of Medicine, *9000 Rockville Pike, Bethesda, Maryland*, 20209, United States of America

OBJECTIVE: The agreement with the NLM permits the generation, maintenance and operation of the three ICRDB data bases (published literature, research projects, clinical protocols) on the NLM computer, and for the dissemination of the information in these collections to institutions subscribing to the NLM computer services.

MAJOR ACCOMPLISHMENTS: The NLM currently maintains approximately 210,000 abstracts of published literature, 17,500 descriptions of research projects and 2,000 summaries of clinical protocols for the ICRDB Program. Each year a total of 20 updates or regenerations are performed to update or correct the records in these three files. Over 10,000 searches were run against CANCERLINE in 1979.

SIGNIFICANCE TO BIOMEDICAL RESEARCH AND PROGRAM OF THE INSTITUTE: In consonance with the National Cancer Act of 1971, this interagency agreement has given the ICRDB Program the cost savings benefit of using an existing organization with capabilities to reformat, process, and make the results of cancer research available to more than 1,200 locations throughout the world via an existing telecommunications network resident at NLM. These locations include medical schools, medical research institutions, regional medical libraries and hospitals throughout the United States, and several countries outside the United States.

PROPOSED COURSE: Plans call for the continuation of this agreement through September 1983.

170. DATA-PROCESSING SERVICES FOR CANCER BIOASSAY SYSTEM

Patel, K., E G & G Inc., *2150 Fields Rd., Rockville, Maryland,* 20850, United States of America

OBJECTIVE: Statistical computational support for statistician(s) at Carcinogenesis Testing (CGT). Such support includes: comparative evaluations of possible statistical data analyses methods for in vivo and/or in vitro bioassays of the GCT (such evaluations may involve substantial studies); retrieving and analyzing the historical control information on weight, survival, and incidence rates for species/strain/sex/-supplier combinations of animals; developing randomization schemes suitable for the CGT; and searching for improved statistical designs for all phases of animal bioassay. The following areas of activity will require significant analysis and programming effort: conversion from CBDS to TDMS; and Strain A mouse system. In addition, support will still be required for existing software and systems including CBDS, IVIS, AMIS, and FMIS. The CGT considers it extremely important that a full staff of software support personnel be available to handle this workload within forty-five days of the final negotiations.

171. ROSWELL PARK MEMORIAL INSTITUTE CORE CENTER GRANT

Murphy, G. P., Roswell Park Memorial Inst., *666 Elm St., Buffalo, New York,* 14263, United States of America

The Roswell Park Memorial Institute Core Center Grant seeks to develop resources that 1) are central to the overall program objectives of a comprehensive cancer center and 2) contribute to a variety of priority activities of the center. Individual projects within the core grant are selected by the criteria for a shared resource.

This continuation of the Roswell Park Memorial Institute Core Center Grant requests funds for four shared resources and support for continuation of the overall Institute effort to develop core shared resources. Projects include: 1) Nuclear Magnetic Resonance Facility; 2) Computer Science Methodology Unit; 3) Biohazard Control Unit; 4) Library Information Services Unit; and 5)

172. EXPLORATORY STUDIES FOR A STATEWIDE CANCER NETWORK

Waalkes, T. P., Johns Hopkins University, School of Medicine, Dept. of Oncology, *725 N. Wolfe St., Baltimore, Maryland,* 21205, United States of America

The major objective of this grant is to develop a Statewide Cancer Network through which appropriate priority cancer control activities can be initiated, implemented, and maintained. The primary effort during the past year was devoted to the in-depth study of specific regional areas throughout the State of Maryland. This study involved the determination of individuals, groups and organizations of importance and influential in health care programs throughout each region. The important relationships and interactions within each community of such health oriented individuals and factions were reviewed and studied from the standpoint of their potential effects on cancer control programs. Background data were also gathered from the public, health providers, and cancer patients to serve as a basis on which to evaluate at a later date the impact of the Center's cancer control programs within a given region. In addition, a pilot study was initiated to develop a suitable clinical data base to assist community hospitals in the handling and evaluation of cancer patient data. This program was a cooperative interaction between community hospitals and the Johns Hopkins Cancer Center. Steps were also taken to evolve the care aspects of the Cancer Network. Collaborative programs were established with specific community regional hospitals involving professional education and care projects. Emphasis was also placed on the development of self-perpetuating, individualized cancer programs within each community hospital. An extension of all these efforts and activities will be carried on into the ensuing year leading to an organized regional Cancer Network through which Cancer Control Programs can be established and maintained.

173. CLINICAL RESOURCES AND DATA COLLECTION

Cornwell, G. G., Dartmouth College, Dartmouth Medical School, Dept. of Medicine, *P.O. Box 833, Hanover, New Hampshire,* 03755, United States of America

This is part of a broader project. A summary of this subproject is not available.

INVESTIGATOR INDEX

Abt, D.A. 73
Acton, R.T. 29
Agthe, C. 155
Aisner, J. 120
Altman, N.H. 56
Andrews, C.J. 121
Athey, W. 60
Atkins, R.C. 106
Bagdoyan, H. 162
Bartlett, M. 9
Bartolucci, A.A. 107
Bell, R. 117
Benjamin, T. 106
Bertram, J.S. 25
Bigner, D.D. 89
Birch, R.M. 107
Bogden, A.E. 10
Bonczkowski, S. 19
Bosley, J. 164
Bossi, A. 168
Bowman, H.E. 36
Boyse, E.A. 48, 50
Brascho, D.J. 132
Brennan, M.J. 133
Broering, N.C. 162
Brown, M. 161
Buchler, D.A. 124
Buonassisi, V. 49
Butterworth, C.E. 149
Byar, D.P. 108
Calabresi, P. 83
Campbell, G. 152
Carr, D.T. 143
Carter, S.K. 156
Cesana, B. 168
Cicmanec, J.L. 72
Claflin, A.J. 3
Clardy, J.C. 94
Cobb, W.R. 100
Cohn, M. 11
Cole, J.W. 21, 137
Colton, T. 113
Coolidge, B.J. 16
Cooper, E.H. 32
Corle, D.K. 108
Cornwell, G.G. 173
Cox, E.J. 67
Cullen, J.W. 134
Curlee, J. 68
Cutler, S.J. 110
D'Angio, G.J. 122
Davis, W.C. 45
De Carli, A. 168
Delafresnaye, J.F. 154
Delemarre, J.F. 167
Delgado, G. 162
Deringer, M.K. 18
Di Sogra, C. 156
Didolkar, M.S. 19
Dodds, A.M. 153
Donaldson, M.H. 145
Dritschilo, A. 162
Dunn, T.B. 18
East, J. 42
Eaton, G.J. 86
Elias, E.G. 19
Engel, J.F. 101
Esterhay, R. 119
Esterhay, R.J. 120
Fahey, J.L. 30
Farnsworth, N.R. 159
Ferrer, J. 73
Fitzjohn, F.E. 40
Flamant, R. 154
Forbes, P.D. 46
Fortner, C.L. 119, 120
Foy, J.L. 120
Gail, M.H. 108
Gallus, G. 168
Gelb, L.D. 93
Gillette, R.W. 88
Golway, P.L. 43, 76
Good, R.A. 112
Gottfried, D.F. 156
Graham, C. 71
Graham, J. 147
Grassi, G.E. 115
Graze, P. 5
Green, S.B. 108
Gregory, W. 117
Griffin, D. 9
Grove, W.R. 119
Gundel, J. 119
Gustafson, J.N. 120
Haenzsel, W. 123
Hammond, D. 135
Handschumacher, R.E. 51
Hanna, M.G. 75
Harlan, H.P. 55, 57, 59, 63, 64
Harrap, K.R. 1
Hart, C. 127
Harvei, S. 33
Hay, R.J. 15
Hernandez, D.M. 54
Heys, J.R. 102
Higby, D.J. 27
Hildreth, R.F. 118, 150
Hirshaut, Y. 7, 17
Hoch Ligeti, C. 18
Hollaender, A. 130
Hollander, C.F. 18
Holmes, P.L. 116
Holt, R.W. 162
Hopfinger, A.J. 105
Howell, S.B. 49
Hunt, C.E. 82
Hutchinson, A.P. 166
Hutchinson, W.B. 80, 125, 146
Jackson, R. 117
Jacobs, H.S. 9
Jarrett, P. 122
Jellum, E. 33
Jenkinson, A.M. 42
Johnson, S.A. 117
Jonas, A.M. 85
Junqueira, A.C. 154
Kaizer, H. 2
Kanter, P. 87
Kaplan, N.O. 49
Kaufman, J.J. 104
Keith, L.H. 103
Kenyon, A.J. 81
Kim, I. 19
Kissman, H.M. 169
Klein, M. 19
Kleinstein, B. 158
Koprowski, H. 53, 77
Kramer, S. 122
Landman, J. 167
Lauer, L.D. 24
Lemp, J.F. 91
Levin, D.L. 108
Levitt, M.H. 18
Ling, N. 34
Lister, T.A. 117
Litvak, J. 148
Loh, K.K. 28
Lubiniecki, A.S. 14
Lunin, L. 157
MacDonald, A. 117
Magee, P.N. 160
Malinin, T.I. 3
Malpas, J.S. 117
Manfredi, C. 123
Mansell, P.W. 139
Margo, G. 156
Marks, P.A. 84, 163
Marshak, R.R. 73
Masui, H. 49
McCaleb, K.E. 129
McGhee, J.R. 52
McGowan, M.J. 44
Meadows, A.T. 122
Menzies, J.D. 41
Metcalf, D. 154
Michaels, A. 39
Mike, V. 113
Montgomery, R. 97
Moon, T.E. 114
Morris, D.M. 19
Muenz, L.R. 108
Muir, C.S. 126
Murphy, G.P. 144, 171
Nelson Rees, W. 22
Orjaseter, H. 33
Otis, A.P. 61, 66
Owens, A.H. 90
Pagano, J.S. 26
Patel, K. 170
Patterson, W.B. 142
Pegram, S. 9
Persidsky, M.D. 34
Philips, F.S. 160
Pihl, A. 33
Potter, J.F. 162
Prehn, R.T. 47, 79
Pretlow, T.G. 8
Priest, P.E. 156
Pyke, H. 128
Richman, L. 111
Rizzino, A.A. 49
Rose, C.S. 151
Rubinstein, L.V. 108
Russell, J.D. 58, 62, 65
Sarngadharan, M.G. 31, 78
Sartorelli, A.C. 20
Sass, B. 18
Sato, G.H. 49

Schein, P.S. 162
Schiffer, C.A. 120
Schiller, D. 69
Schimpff, S.C. 120
Schmidt, J.D. 109
Schneider, R. 74
Schutt, A.J. 37, 38
Sebesteny, A. 40, 41
Seiverling, R. 167
Semple, M. 136
Shamsuddin, A.M. 19
Sibary, K. 156
Sinks, L.F. 162
Soccio, J. 19
Stanley, K.E. 113
Starks, F.W. 96
Steiner, J. 140
Stermitz, F.R. 99
Stesis, K.R. 162
Stewart, H.L. 18
Stolfi, R.L. 70
Tate, F.A. 95
Ting, R.C. 23
Trapani, R. 13
Van der Esch, E.P. 167
van der Werf Messing, B. 154
Vedros, N. 22
Waalkes, T.P. 141, 172
Warnecke, R.B. 123
Watkins, F.S. 131
Weiner, R.S. 12
Weisburger, E.K. 106
Wells, J. 6
White, J.E. 138
Whitney, L.W. 35
Wiernik, P.H. 119, 120
Wilson, J.W. 165
Wilson, W.D. 98
Wolff, J.S. 92
Wrigley, P.F. 117
Yeager, H. 4
Young, S.K. 131
Young, V.M. 120
Zentai, T. 19

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